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USSR Report

AGRICULTURE

No. 1319



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LIVESTOCK

REGULATING PROCUREMENT PRICE DIFFERENCES FOR LIVESTOCK, MILK

Moscow FINANSY SSSR in Russian No 12, Dec 81 pp 55-60

/Article by G.I. Klimenko, chief of the Department for the Financing of the Meat and Dairy Industry of the USSR Ministry of Finance: "On Payments for the Difference in Prices for Livestock and Milk"/

/Text/ A number of measures have been adopted in recent years aimed at increasing the production and sale of animal husbandry products to the state. The procurement prices for livestock and milk have been raised repeatedly. Bonuses have been established for adding on to procurement prices and also discounts for stimulating the sale of products of improved quality. A bonus amounting to 50 percent of the procurement prices is paid out for the sale of products in excess of the annual plan.

As a result of the measures implemented, an increase has taken place in the volume of animal husbandry products sold to the state.

As is known, commencing in 1970 firm plans were established for the procurement of agricultural products and raw materials and for the overall procurement volumes (taking into account the above-plan procurements). During the 1976-1980 period, a bonus of 50 percent was added on to the procurement prices for above-plan procurements of products at kolkhozes, sovkhoses and other state agricultural enterprises.

During the Eleventh Five-Year Plan, additional measures will be undertaken aimed at stimulating an increase in the production and sale of agricultural products to the state. The kolkhozes, sovkhoses and other agricultural enterprises and associations will be provided with unified plans for the sale of agricultural products to the state. In this regard and also for the purpose of maintaining the existing average level of payments for a unit of animal husbandry product, sold to the state by kolkhozes, sovkhoses and other agricultural enterprises and associations, commencing 1 January 1981 the procurement prices included the bonuses paid out for the sale of products over and above the plan.

The procurement prices for livestock and milk sold to the state by kolkhozes, sovkhoses and other agricultural enterprises and associations and also by the population were developed by the union republic councils of ministries and were approved by agreement with USSR Goskomtsen /State Committee on Prices/.

Thus the procurement prices for animal husbandry products were raised by the amount of the bonuses paid out for the sale of such products over and above the plan. In the process, the amount of the increase for individual types of products varied among the union republics. For example, for the USSR on the whole, only one half of the overall amount of bonuses for above-plan livestock sales was employed for raising the procurement prices for livestock. The other portion of this amount and also all 50 percent bonus payments for above-plan milk sales were used for raising the procurement prices for milk. This ratio varied for some union republics. Thus, in the RSFSR, almost the entire amount of bonuses for above-plan livestock sales was used for raising the procurement prices for milk. In the Azerbaijan SSR, the level for raising the procurement prices for livestock and milk was determined based upon the bonuses paid out for above-plan sales of each of these types of products respectively.

In checking the correctness of livestock and milk computations, the workers attached to the financial organs must bear in mind that the bonuses for adding on to the procurement prices and the discounts established earlier for stimulating the sale to the state of products of improved quality, are being maintained.

Bonuses of 35 and 50 percent, differentiated for the union republics depending upon the weight categories (see Table 1) are paid out for young large-horned cattle stock of raised weights.

Table 1

	Bonuses	
	35%	50%
RSFSR, Ukrainian, Belorussian, Kazakh and Moldavian SSR's	from 350 to 400 kg	more than 400 kg
Lithuanian, Latvian and Estonian SSR's	from 370 to 420 kg	more than 420 kg
Uzbek, Georgian, Azerbaijan, Kirghiz, Tajik, Armenian and Turkmen SSR's	from 300 to 350 kg	more than 350 kg

The bonuses added on to procurement prices for raised weights in young stock are paid out only for livestock purchased from kolkhozes, sovkhoses and other state farms. Bonuses are not established for young large-horned cattle stock purchased from the population by kolkhozes, sovkhoses and fattening farms and sold to the state without fattening (as transit goods).

At the present time, approximately 90 percent of the livestock processed are accepted by the enterprises based upon weight and meat quality. For farms and enterprises of the meat industry which have converted over to the delivery (acceptance) of livestock according to weight and meat quality, indicators have been defined in the union republics for the carcasses of these categories of young stock and also for young bulls up to 2 years of age and weighing 300 kilograms or more, paid for according to procurement prices for livestock in a high state of nourishment, young sheep stock less than 1 year of age, paid for at prices for sheep in a high state of nourishment. The weight categories of the carcasses are established based upon the live weight of the livestock groups and the actual yield of meat. The financial organs must bear in mind that the effective coefficients for converting the meat obtained from processing the livestock into its live weight, included in fulfillment of the procurement plan, have become

obsolete. Thus the union republic councils of ministers, by agreement with Minmyasomolprom /Ministry of the Meat and Dairy Industry/, USSR Minsel'khoz /Ministry of Agriculture/ and USSR Minzag /Ministry of Procurements/ are tasked with examining the coefficients of credit so as to ensure that they conform with the livestock conditions and meat yield during processing.

Young Romanov strain sheep less than 1 year of age, regardless of the deposits of subcutaneous fat, are paid for at the prices for sheep in a high state of nourishment and a live weight of no less than 24 kilograms, meat-lard strains -- 30 kilograms and the remaining strains -- 28 kilograms.

Additional payments amounting to 20 percent are added to the procurement prices for Romanov strain sheep and their hybrids weighing 16 kilograms or higher and having wool and semi-wool coats which meet the standard requirements for Romanov sheepskin furs.

The payments for sheep having wool and semi-wool coats which do not meet the requirements for sheepskin coats and also low quality coats (with the exception of karakul and gissar sheep) are reduced by 15 percent.

For the purpose of increasing the material interest of farms and the population in the production and sale to the state of improved quality rabbit meat and pelts, additional payments have been established for use based upon live weight and the procurement periods:

(For a kilogram of live weight)

From 1 January to 15 March	70 kopecks
From 16 March to 31 October	30 kopecks
From 1 November to 31 December	55 kopecks

A price increase amounting to 5 percent has been added to the procurement prices for animal husbandry products being supplied to industrial enterprises and procurement organizations by the members of associations (societies) of amateur rabbit breeders. Reimbursement for the procurement organizations and industrial enterprises for the increased prices paid to these associations (societies) is carried out from a special account of Soyuzglavlegpromsyrye /Main Administration for Interrepublic Deliveries of Raw Materials for Light Industry/ of USSR Minlegprom /Ministry of Light Industry/

In the absence of standard output, the union republic councils of ministers authorize the procurement organizations and enterprises of the meat industry, in the form of an exception, to accept livestock and poultry which deviate from the standard conditions from the kolkhozes, sovkhoses and other state farms, in behalf of fulfillment of the procurement plan. In these instances, the products are paid for at procurement prices which involve the use of appropriate price reductions.

The bonus amounts and additional payments established earlier for milk are also maintained. The payment for 1st class milk includes a bonus amounting to 7 percent of the procurement price for 2d class milk having a basic fat content. For 1st class milk having a temperature of no higher than 10° Centigrade at the moment of its acceptance, a bonus is paid amounting to 5 rubles per ton of milk of basic fat

content. Low quality milk is paid for with a reduction in the procurement price of 7 percent for milk of 2d class basic fat content. In a number of union republics, the procurement prices were established by varieties, that is, taking into account reductions and bonuses amounting to 7 percent.

Individual kolkhozes, sovkhoses and other farms are authorized to supply milk and cream directly to the trade network, to public catering enterprises and to children's, medical and other institutes. In the case of such deliveries and in conformity with State Standard 13277-67, a bonus is not paid for cooled milk.

The accounts between livestock procurement organizations and enterprises of the meat, poultry processing and dairy industry on the one hand and kolkhozes, sovkhoses and other state and cooperative farms and the population on the other, for large-horned cattle, swine, sheep, goats, rabbits, horses (for slaughtering), poultry and milk on the other, are carried out in accordance with the procurement prices and the established bonuses, additional payments or reductions. The accounts for meat are carried out based upon retail prices, minus a trade reduction.

With the existing procurement prices for livestock, poultry, rabbits, milk and dairy products, the production costs for meat and dairy products exceed to a considerable degree the earnings from the sale of such products at the wholesale prices of the enterprises. The wholesale prices for meat and dairy products were established at the retail price level, minus trade and marketing reductions.

In the interest of ensuring profitable operations for enterprises of the meat and dairy industry, intra-republic accounting prices have been established for livestock, poultry, rabbits and also for milk and cream, for calculating the production costs of the meat, poultry processing and dairy industry, with an adjustment for the difference between the procurement and accounting prices in accordance with the existing system. Approval was also given for reductions from the wholesale prices for highly profitable dairy products and for bonuses added on to these prices for individual types of unprofitable and low profitability products.

When establishing the accounting prices for milk and cream and the wholesale price reductions for highly profitable dairy products, a higher profitability is called for in the case of those products which are in high demand by the population.

The difference between the actual cost of the livestock, poultry and rabbits in accordance with the procurement prices and the established additional payments and bonuses for these prices and the cost according to the accounting prices is reimbursed by means of appropriations called for in the union republic budgets. The sum of the excess payment of the differences between the procurement and accounting prices for milk and cream, over the total amount of wholesale price reductions for highly profitable dairy products is reimbursed by means of funds provided for this purpose in the income and expenditure balances of the USSR Ministry of the Meat and Dairy Industry and the corresponding union republic ministries.

With the introduction of new procurement prices on 1 January 1981, the difference in prices for livestock and meat is reimbursed in accordance with the existing system.

Poultry meat supplied directly to the trade network by sovkhoses, poultry factories and kolkhoses is paid for according to the accounting prices, minus the trade reductions. The mentioned enterprises are reimbursed for the difference between the procurement and accounting prices (minus the trade reduction). Poultry meat supplied by enterprises and organizations of the USSR Ptitseprom /Administration of the Poultry Raising Industry/ and also by sovkhoses and poultry factories located in the zones of cities, industrial centers and resorts, to sanatoriums, holiday homes, kindergartens and other institutions, is paid for according to the accounting prices with no trade reductions. In this instance, the enterprises and organizations of USSR Ptitseprom and also sovkhoses and poultry factories are reimbursed for the difference between the procurement and retail prices, with no trade reductions.

When sovkhoses and poultry factories of the USSR Minsel'khoz /Ministry of Agriculture/ system supply poultry meat for the refrigerators of union republic ministries of trade, reimbursement is made for the difference between the procurement and retail prices (less the average trade and marketing reductions).

Sovkhoses and kolkhoses and also the organizations of consumer cooperation also supply the trade network directly with rabbit meat that conforms to the requirements of the inter-republic technical conditions. In this instance, the difference between the procurement and retail prices (minus a trade reduction) is reimbursed by means of the state budget.

Kolkhoses, sovkhoses and other state agricultural enterprises, interfarm enterprises and associations and consumer cooperation organizations having special slaughtering points are also authorized to supply rabbit meat to public catering enterprises, sanatoriums, children's institutes, holiday homes, hospitals and other medical treatment institutes, in accordance with the same conditions established for farms which supply this product directly to the trade network.

For the 1981-1985 period, a bonus amounting to 50 percent of the procurement prices has been introduced for kolkhoses, sovkhoses and other agricultural enterprises and associations, for the sale of livestock, poultry and milk to the state over and above the average level achieved during the Tenth Five-Year Plan. This average level is defined as the sum of the products sold to the state during the five-year period, in delivered weight and divided by five.

The overall volume of products sold to the state during the Tenth Five-Year Plan includes all animal husbandry products credited towards fulfillment of the state sales plan for 1976-1980. The sales volume over and above the achieved level is determined according to the totality of all types of livestock and poultry credited towards fulfillment of the procurement plan.

When determining the average level of milk sales to the state during the Tenth Five-Year Plan, for farms where a change took place in the norm for basic fat content, the actual volume of milk sold is recomputed using the existing norm for basic fat content.

The volume of livestock and milk sales over and above the average level achieved during the Tenth Five-Year Plan is defined as the difference between the volumes of products sold to the state and credited towards fulfillment of the procurement

plan for the current year of the Eleventh Five-Year Plan and the average annual level of sales for the 1976-1980 period.

Allow me to cite an example for a farm (see Table 2).

In our example, a 50 percent bonus added on to the procurement price for having exceeded the average level achieved during the Tenth Five-Year Plan is paid out in 1982, based upon 1981 results, for 10 tons of livestock and 4 tons of milk, in 1983 -- based upon 1982 results for 15 and 9 tons respectively, in 1984 -- based upon 1983 results for 20 and 14, in 1985 -- based upon 1984 results for 28 and 24 tons and in 1986 -- based upon 1985 results for 33 and 34 tons.

Table 2

(weight in tons)

Types of Output	Tenth Five-Year Plan						Eleventh Five-Year Plan				
	1976	1977	1978	1979	1980	Average	1981	1982	1983	1984	1985
Volume of livestock procurements	100	110	105	120	125	112 (560:5)	122	127	132	140	145
Excess above average level							+10	+15	+20	+28	+33
Volume of milk procurements	200	220	230	235	245	226	230	235	240	250	260
Excess above average level							+4	+9	+14	+24	+34

The indicator for the average level of sales of agricultural products to the state, achieved during the Tenth Five-Year Plan, remains stable for computational purposes for all years of the Eleventh Five-Year Plan. A change is permitted in it only in those instances where, based upon a decision handed down by higher republic, kray and oblast directive organs, changes take place in the conditions for the use of farmland.

If a merging of farms took place during the Tenth Five-Year Plan, then when determining the average sales level for products the sales must be summarized for each farm. When breaking farms up into smaller units, the average sales level during the 1976-1980 period, for each farm thus formed, is computed proportional to the procurement plans assigned.

In the case of those farms for which a sales plan for animal husbandry products was established for the very first time for the Eleventh Five-Year Plan, a 50 percent bonus added on to the procurement price will be paid during the first 3 years for the sale of these products over and above the established procurement plan and in the future -- for sales above the average level achieved during the previous three years.

In accordance with the existing system, sovkhoses and other agricultural enterprises are authorized (and a recommendation has been made that kolkhozes do the same) to conclude agreements with kolkhoz members, manual and office workers and other citizens for the raising and procurement of livestock and poultry and also surplus milk. These products are credited to the kolkhozes and sovkhoses in their production volumes and towards fulfillment of their procurement plans, with the established bonus being paid out for the quantity and quality indicators.

Livestock, poultry and milk procured on the basis of agreements with the population and sold to the state are included in the overall volume of products sold during the current year, for the purpose of computing the 50 percent bonus payment.

Livestock procured from the population by kolkhozes, sovkhoses and other farms, with no agreements being concluded for their raising and sold to the state without fattening, are excluded from the count of products sold to the state over and above the average level and the sum of the earnings for this livestock is not taken into account in the computations for calculating the 50 percent bonus.

Animals which from the day of purchase and in the absence of an agreement did not achieve the two month norm for weight increase, as called for in the production-financial plan of the farm, are considered to have been sold without fattening.

The average sales level for state animal husbandry complexes and poultry factories placed in operation during the Tenth Five-Year Plan is determined by dividing the amount of products sold to the state, commencing with the last normative year for mastering the planned capabilities for product sales, by the number of these years, including the last normative year for mastering the capabilities.

During the period for mastering the planned capabilities, a 50 percent bonus added on to the procurement prices is paid out to state animal husbandry complexes and poultry factories for products sold over and above the annual plan and in subsequent years the bonus is paid out for sales over and above the level achieved during the last normative year for mastering the planned capabilities.

Those fattening farms, livestock procurement organizations and interfarm enterprises which carry out state procurements of livestock and the fattening of the livestock, with subsequent sale to the state of the weight increase obtained in behalf of the established plan, are paid a 50 percent bonus added on to the procurement price for weight increases sold over and above the sales level for the 1976-1980 period.

An information-statement on the average level of sales of agricultural products to the state during the Tenth Five-Year Plan is composed, based upon a number of documents (acceptance receipts, receiving-delivery documents and so forth), by the farm, the state inspection for procurements and the quality of agricultural products, the agricultural administration (production administration) and the state statistical inspector for the rayon and thereafter it is delivered to the rayon state procurement inspection of each procurement organization-contractor, to the kolkhoz, sovkhos and to the other agricultural enterprise and association.

For livestock, the bonus is 50 percent of the average procurement price during the year, taking into account the actual earnings realized from the livestock and poultry sold to the state. The total amount of the payments includes all of the bonuses and reductions for quantitative and qualitative indicators. This amount also includes the sum obtained by the farm from the sale of poultry and rabbit meat, in accordance with the procurement prices and the orders of the procurement organizations.

The average annual procurement price for livestock is determined by dividing the total amount of payments received by a farm from the sale of livestock and poultry to the state (with the exception of earnings for pedigree livestock and poultry and the sale of meat for public catering and also to manual and office workers of

sovkhozes and other state farms), by the live weight of the livestock and poultry (with the exception of pedigree livestock and poultry and also that sold for public catering and to the manual and office workers of sovkhozes and other state farms).

The 50 percent bonus for milk and dairy products is applied to the average annual procurement price (payment) at the time of sale.

The average procurement price (payment) is computed by dividing the overall amount of earnings, taking into account all of the bonuses and reductions for quality indicators (with the exception of earnings from the sale of milk and dairy products to public catering and also to manual and office workers of sovkhozes and other state farms), by the weight of the products sold to the state (with the exception of that sold to public catering and to manual and office workers of sovkhozes and other state farms).

For kolkhozes, sovkhozes and other agricultural enterprises and associations, for which the procurement prices for milk and cream were approved at the retail price level, minus the trade reduction or higher than it, the payment of a 50 percent bonus upon the delivery of these products, in behalf of the state plan, directly to the trade network, to public catering enterprises and to children's, medical and other institutes is applied to the procurement prices.

A collated data document serves as the basis for applying a 50 percent bonus to the procurement prices for animal husbandry products. This document is composed by the farm and the procurement specialist (contractor) and it is confirmed by the agricultural administration of the rayon executive committee, by the rayon state statistical inspector and by the state inspection for the procurements and quality of agricultural products.

When composing the collated data document, attention must be directed to the following.

In order to determine the volumes to which the average level (line 6) was exceeded, use must be made of the volumes shown in lines 1 and 5. These latter volumes include the meat expended for public catering and for sales to manual and office workers and also the pedigree livestock and pedigree rabbits and poultry. For computing the average payments for livestock, use is made of the amount shown on line 3 (actually sold by the farm to the state), without taking into account the pedigree livestock, pedigree rabbits and poultry, or the meat expended for public catering or sold to manual and office workers.

In a similar manner, collated data documents are composed on the sale and procurement of milk for the state over and above the average level achieved during the Tenth Five-Year Plan.

The payment to kolkhozes, sovkhozes and other agricultural enterprises and associations of a 50 percent bonus added on to the procurement prices, for the sale of products to the state over and above the average level achieved during the Tenth Five-Year Plan, is made by the procurement organization and the enterprise (contractor) based upon the annual results.

The payment to kolkhozes, sovkhozes and other agricultural enterprises and associations of a 50 percent bonus added on to the procurement prices, for the sale

Collated Data Document on Livestock and Poultry Sales and Procurements During 1981, Over and Above Average Level Achieved During the Tenth Five-Year Plan

Composed _____

(name of farm)

and fattening sovkhos _____

(name of procurement specialist-contractor)

I. Computation of number of livestock and poultry procured over and above level achieved

- | | |
|--|--------------|
| 1. Livestock and poultry sold-procured for the state on the average for the 1976-1980 period | 500 quintals |
| 2. 1981 plan for livestock and poultry sales-procurements for the state | 510 quintals |
| 3. Livestock and poultry actually sold by the farm to the state | 480 quintals |
| 4. Included in fulfillment of the plan: | |
| a) meat expended at sovkhoses and other state farms for public catering and for sale to manual and office workers (in live weight) | 50 quintals |
| b) live weight of pedigree livestock and pedigree rabbits and poultry sold | 5 quintals |
| 5. Total amount sold-procured (line 3 + line 4) | 535 quintals |
| 6. Livestock and poultry sold-procured over and above the level achieved, for which a 25 percent bonus is paid (line 5 - line 1) | 35 quintals |

II. Computation of bonus payments for livestock and poultry sold over and above the achieved level and over and above the plan

- | | |
|---|---------------|
| 7. Paid to the farm for the livestock and poultry indicated in Line 3 | 62,400 rubles |
| 8. Average payment (price) for 1 quintal of livestock or poultry | 130 rubles |
| 9. 50 percent bonus for 1 quintal of livestock or poultry | 65 rubles |
| 10. Total amount of bonus payments due to the farm for livestock and poultry sold over and above the achieved level (line 9 X line 6) | 2,275 rubles |

of products to the state over and above the average level achieved during the Tenth Five-Year Plan, is made by the procurement organization and the enterprise (contractor) no later than 15 days following the composition of the collation document and also no later than 1 month following the completion of the sale of the products.

In the event of non-payment of the bonus within the mentioned period, the kolkhozes, sovkhoses and other agricultural enterprises and associations retain the right to obtain it in the established manner.

It is known that if the 50 percent bonuses added on to the procurement prices, for the sale of products over and above the annual plan, are not paid by 1 January,

then the payments are made during the first quarter of the current year. This system is retained for the payment of bonuses, added on to the procurement prices, for the sale of livestock and milk to the state over and above the average level achieved during the Tenth Five-Year Plan.

With further refinement of this system, the financial organs will be provided with additional explanation that will be coordinated with the interested ministries and departments.

Attention should also be directed to the following. In accordance with the system which existed earlier, the payment of a 50 percent bonus was added on to the established procurement prices based upon the types, state of nourishment and weight conditions of the livestock sold to the state, over and above the annual procurement plan on the whole for all types of livestock and poultry, provided an increase took place in the number of animals available on the farm at the beginning of the year. During the Eleventh Five-Year Plan, a condition for adding a 50 percent bonus to the procurement prices for livestock and poultry sold to the state will be that of exceeding the average level of procurements achieved during the Tenth Five-Year Plan. Here the number of livestock available on a farm will not be taken into account.

The financial organs must bear in mind the following when exercising control over the correctness of payments for the differences in milk prices. It is known that in accordance with the existing system, kolkhozes, sovkhoses and other farms for which the procurement prices for milk and cream were approved at the retail price level, minus a trade reduction or higher than this level, which sell milk and cream directly to the trade network in behalf of the state procurement plan, public catering enterprises and children's, medical and other institutes, in accordance with orders issued by the holder of capital based upon allocated funds, at retail prices minus a trade reduction, are reimbursed by means of the state budget for expenses involved in the pasteurization of milk and cream, for delivering these products to the consumers at the rates for motor vehicle transport and, in appropriate instances, also for the difference between the procurement and retail prices, minus the trade reduction, and a 50 percent bonus added on to the procurement prices for the sale of products over and above the annual plan (commencing 1 January 1981, for exceeding the level achieved during the Tenth Five-Year Plan).

The expenses and the difference in prices are reimbursed by the rayon (municipal) financial departments in the areas where the farms are located, using appropriations made available in the budget for the rayon or city. These appropriations are allocated by the union republics using funds made available for providing reimbursement for the difference in prices for milk and dairy products. Prior to 1 January 1981, the financial organs carried out the payment of a 50 percent bonus for milk sales over and above the plan.

Since, in accordance with the new system, the 50 percent bonus added on to the procurement prices for milk and dairy products sold to the state over and above the average level achieved will be made by the procurement organization (contractor), the indicated bonus for exceeding the average level for milk sold directly to the trade network by kolkhozes, sovkhoses and other farms will be paid to the public

catering enterprises and children's, medical and other institutes, not by means of appropriations provided for in the local budgets, but rather from a special account established for controlling the differences in milk prices.

The financial organs must exercise systematic control over the correctness of all work associated with determining the average level for the sale of animal husbandry products to the state during the 1976-1980 period and also the volume of livestock and milk sales over and above the level for the Tenth Five-Year Plan. Controls should be implemented aimed at ensuring correct use of the procurement prices established for livestock and milk commencing 1 January 1981 and also the validity of the 50 percent bonus payments. Every attempt must be made to eliminate both excessive expenditures of state funds and underpayments to suppliers.

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LIVESTOCK

SHORTCOMINGS IN BEEF CATTLE RAISING IN BELORUSSIA DISCUSSED

Minsk SEL'SKOYE KHOZYAYSTVO BELORUSSII in Russian No 11, Nov 81 pp 13-14

/Article by K. B. Tsyplyakov, chief of the Belorussian SSR Main Administration for Beef Production and State Purchases of Livestock: "Problems of Beef Cattle Raising"7

/Excerpts/ Beef occupies almost 72 percent in the total balance of the meat produced in Belorussia. The republic's natural and climatic conditions, as well as the improvement in the pedigree composition of animals made in the last few years, contribute to the development of its production. The feed and material and technical base of kolkhozes and sovkhoses has been strengthened and large specialized farms, on which advanced livestock fattening technologies are introduced and improved, have been established. As a result, the average annual production of beef on kolkhozes and state farms rose 25.5 percent during the 10th Five-Year Plan, as compared with the Ninth Five-Year Plan. At the same time, the population of large-horned cattle increased and the average live delivery weight of fatlings rose.

Specialized farms, where livestock is fattened on an industrial basis, have made especially good advances. For example, last year the Kolkhoz imeni Uritskiy in Gomel'skiy Rayon sold 2,698 tons of beef to the state. A total of 7.5 man-hours and 7.3 quintals of fodder units per quintal of beef were expended. The production costs of 1 quintal of output were 150 rubles and the sector's profitability, 59 percent.

A few years ago the Gorodeyskiy Sovkhoz--the head farm of the Nesvizh Interfarm Association for Beef Production--adopted the experience of the people of Gomel'skiy Rayon. In 1980 the sovkhos fattened and sold 3,650 head of large-horned cattle, each head weighing 427 kg, on the average, to the state. A total of 98.4 percent of the fatlings sold were of a high degree of fatness.

The results of the organization of livestock fattening on the Krasnoberezhskiy Sovkhoz in Zhlobinskiy Rayon, on the Grudinovskiy Sovkhoz in Bykhovskiy Rayon and on some other farms of the system of the Belorussian Main Administration for Beef Production and State Purchases of Livestock gladden us.

However, the increase in beef production could have been more significant if the urgent problems of the further development of beef cattle raising had been solved more rapidly. On many farms the increase in beef production is still obtained extensively, that is, as a result of an increase in the stock population, not in the

productivity of cattle. The low level of animal feeding is a deterrent. In the last 3 years only 17 to 18 quintals of fodder units per average annual head of young large-horned cattle have been expended. This is about 5 fodder units per day. Therefore, it is not surprising that the average daily increase in the live weight of young stock from birth to slaughter is within 400 to 450 grams.

Whereas on specialized farms for beef production the problems of final fattening technology have been worked out to some extent, the raising of young large-horned cattle at the first and second stages, that is, until the age of 135 to 140 days, is carried out in the old way. As a rule, animals are raised on ordinary farms without regard for the requirements of technology and the observance of zooveterinary conditions. On many farms there is no starter mixed feed and whole and skimmed milk is not allocated sufficiently to young stock. As a result, the high energy of growth and development of animals during this period is utilized only at the rate of 50 to 60 percent and their weight gains are at the level of 300 to 350 grams. Such a state of affairs exists even on economically strong farms, such as the Sovkhoz imeni Timiryazev in Glubokskiy Rayon, the Urechskiy Sovkhoz in Lyubanskiy Rayon and so forth.

Unfortunately, even the mixed feed supplied to kolkhozes and sovkhoses does not always correspond to the technology of young large-horned cattle breeding. That is why every farm should increase the volumes of procurement of vitamin hay and grass meal and itself prepare feed mixtures from the available fodder resources and mineral-vitamin additives. Incidentally, this is done on advanced specialized farms. The task of the scientists of the Belorussian scientific research institutes of animal husbandry and veterinary science is to develop formulas of feed mixtures within the reach of farms, which would enable them to obtain average daily weight gains of 650 to 700 grams in young stock aged 4 to 6 months. It is necessary to see to it that such mixtures can be prepared in kolkhoz and sovkhos feed shops.

At present in the republic there are 91 alcohol, 4 sugar and 3 starch plants, which produce more than 2 million tons of spent grains, about 1 million tons of sugar beet residues, apart from molasses, and 124,000 tons of pulp in the form of waste. This is a large feed reserve, which, unfortunately, is not yet used efficiently. This is what calculations show. When young large-horned cattle of a live weight of 300 kg is placed for final fattening on this waste, in 2 to 2.2 turnovers it is possible to fatten about 500,000 head of cattle and to produce 70,000 to 75,000 tons of beef. In fact, however, one-half of this cattle population is fattened on the waste of alcohol and food industries. Sugar beet residues and molasses are distributed to all sugar beet sowing farms, which often utilize them for other purposes. As a result, the proportion of sugar beet residues in the ration of feeder cattle is not high. For example, on the Belichi Sovkhoz in Slutskiy Rayon it comprises only 15 percent. Meanwhile, only as a result of an increase of sugar beet residues in the ration of fatlings to 40 percent the farm could have additionally fattened up to 5,000 head of cattle annually.

Practice has confirmed the high economic efficiency of cattle fattening on spent grains. For now its fattening has been organized only at 51 alcohol plants. The remaining plants distribute spent grains to anybody. A negligible amount of spent grains is used in cattle fattening. Spent grains, like pulp, which contain much water, are transported to farms over long distances, which is economically unprofitable.

In our opinion, for the purpose of an efficient utilization of the waste of alcohol and food industries, to avoid its unnecessary transportation, it would be advisable to organize final cattle fattening at all alcohol and food industry enterprises. All the obtained molasses, which will make it possible to balance the sugar-protein ratio in the ration of animals, should also be allocated to fattening farms. As the experience of the Demekho Sovkhoz in Rechitskiy Rayon and of the Pirevichskiy Sovkhoz in Zhlobinskiy Rayon indicates, in this case the weight gains of large-horned cattle in final fattening reach 1,000 to 1,100 grams. Farms can be centrally compensated for sugar beet residues, pulp and spent grains with mixed feed.

Following the example of the Kolkhoz imeni Uritskiy in Gomel'skiy Rayon interfarm associations for beef production are now established in every rayon. Cattle will be fattened on them according to industrial technology. Some farms will raise young stock and others will fatten it. The task is to see to it that the average daily weight gain of fatlings is not below 800 to 900 grams and the average delivery weight of an animal, 400 kg and more.

The quality of fattened young stock is also of great importance here. It is well known that with the same feed expenditures animals of beef breeds gain weight more efficiently and reach the live delivery weight of 400 kg and higher more rapidly. For this purpose a network of specialized farms, which will breed beef cattle, is being established in the republic. In every oblast one such farm was assigned for the development of the technology of the sector's management: in Brestskaya Oblast, the Bol'shevik Sovkhoz, in Vitebskaya Oblast, the Krasnoberezhinskiy Sovkhoz, in Gomel'skaya Oblast, the Narovlyanskiy Sovkhoz, in Grodnenskaya Oblast, the 18 Part's'yezd Sovkhoz, in Mogilevskaya Oblast, the Pamyat' Frunze Sovkhoz and in Minskaya Oblast, the Uzdenskiy Sovkhoz. Beef heifer-calves are transported to them and the existing breeding stock of large-horned cattle is inseminated with bulls of beef breeds.

In the future a number of farms of the system of the Belorussian Main Administration for Beef Production and State Purchases of Livestock will fatten mainly cattle of beef breeds. A firm basis is established for this. There are already about 30,000 head of such cattle, including 6,700 cows. This year the stock of beef cattle will increase 1.5-fold. On some sovkhozes the proportion of cattle of beef breeds has already been increased to 65 or 70 percent.

Large-scale construction of livestock barns is being carried out. In the last few years alone a farm for 1,000 cows has been built by the economic method on the Uzdenskiy Sovkhoz in Uzdenskiy Rayon. The construction of such farms is being completed on the 18 Part's'yezd Sovkhoz in Zel'venskiy Rayon, the Linovskiy Sovkhoz in Pruzhanskiy Rayon and the Krasnoberezhinskiy Sovkhoz in Dokshitskiy Rayon. Many large farms are being reconstructed. For the purpose of lowering the cost of construction, a plan for a cow house for 1,700 head with the use of lightened structures was developed together with the Belorussian Institute for the Planning of Industrial Buildings and Structures for Agriculture. The cost of a place for one animal in it does not exceed 500 rubles. Plans are made to build such a cow house on the Pamyat' Frunze Sovkhoz. Planning estimates for the construction of farms for 800 cows on the Man'kovichskiy Sovkhoz in Stolinskiy Rayon, the Udarnik Sovkhoz in Orshanskiy Rayon, the Osveyskiy Sovkhoz in Verkhnedvinskiy Rayon, the Vereskovo Sovkhoz in Novogrudskiy Rayon, the Loshnitsa Sovkhoz in Borisovskiy Rayon and the Belynichy Sovkhoz in Belynichskiy Rayon are being worked out.

The established farms for cows of beef breeds should become the basic reproducers of the stock of beef cattle. The task of increasing the population of cows of beef specialization in the system of the Belorussian Main Administration for Beef Production and State Purchases of Livestock to an average of 50 head per 100 hectares of agricultural land in the future is set. This will make it possible to annually obtain 250,000 to 260,000 head of young crossbred large-horned cattle and, as a result, to increase meat production by 50,000 to 60,000 tons.

As a result of the improvement in the keeping and feeding of animals the production of livestock products increased substantially. In 8 months 54,000 tons of meat were delivered to the state, which is 1,500 tons more than during the same period last year. The average delivery weight of fatlings increased by 14 kg. A total of 93 percent of the fattened animals delivered by sovkhoses of the Minsk and Gomel' Oblskotoprom Trusts to the state were of a higher degree of fatness. The average delivery weight of fatlings was 403 to 404 kg.

Livestock breeders on farms are now doing everything to carry out livestock wintering in an organized way and to successfully fulfill the adopted socialist obligations of the first year of the 11th Five-Year Plan.

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LIVESTOCK

INTENSIFICATION OF UZBEK BEEF PRODUCTION ADVANCED

Tashkent SEL'SKOYE KHOZYAYSTVO UZBEKISTANA in Russian No 10, Oct 81 pp 28-29

/Article/ by I. Khidirov, deputy director of the Uzbek Scientific Research Institute of Animal Husbandry, candidate of agricultural sciences, and K. Khabibullin, head of the laboratory of technology of beef production and meat quality, candidate of agricultural sciences: "Intensification of Beef Production"

/Text/ An extensive program for the intensification of animal husbandry on the basis of extension of specialization and concentration of production and development of interfarm associations was adopted by the decisions of the 20th Congress of the Communist Party of Uzbekistan. Priority tasks for the strengthening and development of the material and technical base of animal husbandry, application of new technologies and wide utilization of advanced experience and scientific achievements were also determined.

The meat of large-horned cattle is in great demand by the population. In this connection an increase in the production and improvement in the quality of beef represent the most important task of animal husbandry workers. Impressive targets have been set for them. By the end of the 11th Five-Year Plan the proportion of beef in the total production of meat (carcass weight) in the republic will make up 70 percent.

There are good prerequisites for the accomplishment of such a task. For example, more than 100 interfarm enterprises for the fattening of large-horned cattle and the raising of heifers were put into operation in the last few years alone. In 1981-1985 the construction and expansion of capacities of animal husbandry complexes for the raising and fattening of large-horned cattle for 110,000 head is envisaged and the construction of five new complexes for the raising and fattening of 10,000 head in each is planned.

The methods of industrial crossing of cows of dairy breeds with bulls of specialized meat breeds developed in the Uzbek Scientific Research Institute of Animal Husbandry are of great importance for an increase in beef production. Crossbred bulls of various breed combinations at the age of 15 months surpass their maternal contemporaries in live weight by 17 to 33 kg.

At present more than 95 percent of all the beef in the republic is obtained from animals of dairy and dairy-meat breeds. In this connection, along with selection according to milk productivity, it is also necessary to improve the meat qualities

of livestock. On every dairy farm 60 to 70 percent of the best cows should be assigned to a pedigree group so that young replacement stock can be obtained from them by the pure breeding method. The remaining 30 to 40 percent of the cows should be utilized for the production of young beef stock by crossing them with bulls of specialized meat breeds. At the same time, not only the meat qualities of livestock are refined, but the dairy herd is improved at more rapid rates.

We have established that crossbreeds of the first generation from the crossing of red-steppe, black-and-white and red Estonian breeds and local livestock with bulls of specialized meat breeds surpass their contemporaries of maternal breeds in live weight and carcass yield by 10 to 12 percent and in the caloricity of the carcass, by 20 to 25 percent.

Interbreed crossing is carried out and produces results on farms in Dekhkanabadskiy Rayon, Kashkadar'inskaya Oblast--the Kok-Bulak Sovkhoz, the Sovkhoz imeni Usman Yusupov and the 50 Let SSSR Sovkhoz--and on farms in Surkhandar'inskaya Oblast--the Babatag Sovkhoz, the Derbent Sovkhoz and so forth. The crossbred young stock raised and sold there is of a higher degree of fatness (it weighs 420 to 450 kg), whereas the average delivery weight of large-horned cattle on kolkhozes and sovkhoses in the above-mentioned oblasts is 370 to 390 kg.

This indicates that it is necessary to expand industrial crossing even more and to carry it out in two directions. In utility dairy herds cows of dairy and combined breeds should be crossed with sires of early maturing meat breeds and meat breeds should be crossed among themselves. This should be carried out as a planned measure in the system of animal husbandry management. When plans are made, the size of the breeding stock designed for crossing should be determined on every farm. It is necessary to proceed from the classification of animals and, at the same time, to select cows and heifer-calves of no pedigree significance for industrial crossing.

The republic's animal husbandry is being transferred to an industrial basis. Under such conditions it is not sufficient to obtain beef as a product attendant to milk. There is an urgent need to raise and fatten livestock for meat according to special technology both on dairy and specialized meat farms.

In this connection there is the question of a more rapid development of beef cattle raising as an independent sector of animal husbandry.

Hay, straw, silage and pasture grass are the basic feed for beef cattle. Large-horned cattle of meat breeds and their crossbreeds with dairy breeds are well adapted to mountain and piedmont conditions and are noted for their plain taste in feed and resistance to diseases.

However, this sector's potentials are not utilized fully. In the republic there is a total of 180,000 head of beef cattle, including about 40,000 cows and heifers. Some farms sell cattle of an average weight lower than the average republic indicator.

At present the republic's beef cattle raising is based mainly on the breeding of crossbreeds of local livestock and crossbreeds of dairy breeds with bulls of pure meat breeds.

Numerous investigations have shown that with the proper selection of breeds and intensive raising until the age of 15 to 18 months young crossbred stock surpasses its contemporaries of maternal breeds in live weight by 6 to 12 percent, in carcass weight, by 12 to 15 percent and in carcass yield, by 1 to 3 percent. Feed expenditures per kg of weight gain in it are 10 to 12 percent lower and the calorificity of meat is 15 to 20 percent higher.

Such meat breeds as Aberdeen Angus and Charollais are most promising for crossing with cows of dairy specialization.

During crossing special attention should be paid to the individual qualities of sires. They should be checked according to the quality of offspring. Good feeding and normal keeping conditions also contribute to the manifestation of the potentials of young crossbred stock. As our long-term scientific production experiments have shown, the greatest effect is attained as a result of intensive breeding of crossbreeds with their subsequent slaughter at the age of 15 to 18 months with a live weight of 420 to 450 kg and higher. At the same time, on the average, feed expenditure per head in 15 months will be 2,600 to 2,700 fodder units and in 18 months, 3,100 to 3,200.

The introduction of advanced technology developed by the laboratory workers jointly with the workers of the support point and specialists of meat farms is of great importance for an efficient management of beef cattle raising. It includes a whole set of problems: selection of a cattle breed most effective for particular conditions; creation of a correct herd structure; selection of the most advisable methods of cattle breeding; organization of a firm feed base; application of advanced methods and techniques of feeding and keeping of the foundation herd; raising of young pedigree stock; organization of zooveterinary services.

Crossbreeds of local livestock with early maturing meat breeds are now raised and fattened on advanced specialized farms of meat specialization. For example, on the Babatag Sovkhoz and other farms in Surkhandar'inskaya Oblast there are already more than 5,000 crossbreeds. In the next few years their number will increase sharply and comprise 12 to 15 percent of the total large-horned cattle stock in the republic. The average delivery weight per head is to be increased to 420 or 450 kg.

Other elements of the developed technology are also being introduced. Seasonal calving of cows from 15 March through 10 May is practised on the Babatag Sovkhoz and the Derbent Sovkhoz in Surkhandar'inskaya Oblast and on the Kok-Bulak Sovkhoz, the Sovkhoz imeni Usman Yusupov and other farms in Kashkadar'inskaya Oblast. At the same time, by the pasture period calves eat grazing fodder well, develop more uniformly and have approximately the same weight at weaning time.

After the parching of pastures and the weaning of young stock the transfer of young stock to fattening areas for further raising and fattening is practised on farms of meat specialization. Such technology enables them to obtain average daily weight gains of 885 to 953 grams during the fattening period. The weight of crossbreeds of the first, second and third generations obtained from the crossing of local livestock with the Aberdeen-Angus breed reaches 400 to 460 kg. Animals of a higher degree of fatness comprise 96 percent.

An accelerated development of cattle beef raising and an extensive introduction of industrial crossing can and should become an important direction in the work on the realization of the special food program outlined for the 11th Five-Year Plan.

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LIVESTOCK

VETERINARY SERVICE ESSENTIAL FOR DISEASE PREVENTION

Moscow SEL'SKAYA ZHIZN' in Russian 8 Jan 82 p 1

[Undersigned article: "The Duty and Honor of the Veterinary Physician"]

[Text] The nation's veterinary service network is rich in self-sacrificing and devoted individuals who genuinely love their difficult but important profession. Thus, in Penzenskaya Oblast the veterinary physician V. Ye. Voronin is well-known. An employee of the Kuznetsk Veterinary Laboratory, he was one of the first in this country to conclude that the stomach diseases of newborn calves are of an infectious nature. The method he had proposed for separate raising of small groups of young livestock in isolated premises has now become a mandatory technological rule. The veterinary network of Torzhokskiy Rayon in Kalininskaya Oblast is headed by V. N. Strakhov. For his achievements in the struggle against the subcutaneous insects plaguing large horned cattle he has been awarded a prize by the USSR Council of Ministers. The Rodina Kolkhoz in Vologodskiy Rayon raises large numbers of young livestock each year, mainly owing to its chief veterinary physician, A. M. Vedeneyev.

Dangerous infectious diseases of livestock are being successfully combatted by veterinary specialists of Lithuania, Stavropol'skiy Kray, and the Rostovskaya, Chelyabinskaya, Kustanayskaya, Kokchetavskaya, Cherkasskaya, Dnepropetrovskaya, and certain other oblasts. The survival rate of young livestock has been markedly increased by the veterinary service workers of Chuvashiya and the Crimea. Their experience shows that there is every possibility for raising entirely healthy herds even under the most difficult conditions. However, this example is not being followed everywhere. Not all veterinary specialists as yet attend to their highly important functions with a feeling of great responsibility. In certain places the party, soviet, and administrative heads are not monitoring the performance of the veterinary service. Owing to the untimely conduct of preventive and hygienic measures and owing to failure to observe veterinary and sanitation rules, the morbidity rate of livestock in those places is still high.

It is necessary to thoroughly investigate any such instance, in every individual rayon and settlement affected, and to develop as rapidly as possible comprehensive plans for organizational-administrative, veterinary, sanitary, and other measures assuring the recovery of the health of livestock on such farms. The local party and government organs should improve their management of veterinary service and increase the responsibility of the managers and experts of local agricultural agencies and farms for the assurance of model veterinary-sanitary conditions of kolkhozes and sovkhoses.

It is important to rigorously monitor the fulfillment of comprehensive plans and requirements of the Veterinary Statute of the USSR. State veterinary inspectors, who have been assigned broad powers, are called upon to play a major role in this respect. Their tasks include not only the organization of rigorous veterinary monitoring but also the dissemination and practical introduction of the achievements of science and advanced knowhow, that is, in a nutshell, the improvement of all veterinary work. These tasks are being skillfully performed by the main state veterinary inspectors in Belorussia, some oblasts of the Ukraine, Altayskiy Kray, and Kuybyshevskaya Oblast. At the same time, certain state inspectors have relaxed the requirements for farm managers and are tolerating instances of violations of veterinary laws.

One reason for the appearance of infectious diseases is the failure to inoculate livestock on farms of every category. There still exist veterinary specialists who regard their work as limited to only kolkhoz and sovkhos farms and do not provide service to livestock on private land plots. Need it be said that this is harming the common cause? Medical assistance to the privately held livestock of citizens should be provided on the same terms as in the socialized sector: at the kolkhozes and sovkhos, by their own specialists, and in rural settlements, by the employees of the state veterinary service. A good example in this respect is being provided by Estonian specialists.

Veterinary and zootechnical practice points to a considerable latent potential for streamlining veterinary work. The prevention of diseases among heifers and newborn calves, for example, is greatly assisted by a systematic and comprehensive veterinary examination of livestock, constant monitoring of herd reproduction, and concern for conditions of upkeep and proper feeding of the animals. Operative monitoring of the quality of all income feed shipments, as well as of the zoohygienic condition of animal-husbandry premises and parameters of the microclimate, and also rapid elimination of any detected shortcomings also enter into the scope of activities of veterinary specialists.

The veterinary specialty is among the most difficult and responsible rural occupations. As a whole, veterinarians are devoted, worthy people who deserve every support. This makes all the more intolerable any instance of a disdainful attitude toward veterinarians by farm managers who sometimes show little concern for their working and living conditions. Only this can account for the fact that of the 35 veterinary physicians and 47 veterinary technicians hired in 1980 at the farms of Kokchetavskaya Oblast, only one-half presently remain at their positions.

If the veterinary physician or technician is to work unhindered, he needs appropriate material and technical resources: not just a variety of needed drugs, instruments, and equipment, but also veterinary-sanitation facilities such as dispensaries, isolators, birthing premises, maneges, veterinary-sanitary testing facilities, and quarantining premises. Unfortunately, farm managers not infrequently pay no attention to these aspects. Sometimes even the basic veterinary facilities are lacking on newly built livestock complexes and farms, where sick animals are kept together with the entire herd and no measures are taken to protect farms from the spread of infections. All such instances, like the instances of violation of veterinary rules and laws, should be subject to a rigorous and principled condemnation.

Together with all toilers of the countryside, these days the workers of veterinary service also work arduously. It is the duty and honor of veterinarians to protect kolkhoz and sovkhos herds against diseases and to exert every care to increase livestock productivity and the quality of production on livestock farms.

TILLING AND CROPPING TECHNOLOGY

OPTIMUM GRAIN SOWING NORMS FOR KIRGHIZ SSR DISCUSSED

Kirghiz Agronomist Recommends Review

Frunze SEL'SKOYE KHOZYAYSTVO KIRGIZII in Russian No 8, Aug 81 pp 24-25

[Article by I. Yastrebov, honored agronomist of the Kirghiz SSR and chief of the State Committee of Inspections for the Kirghiz SSR: "Optimum Seed Sowing Norms for Grain Crops"]

/Text/ During the past few years, without any basis, in the absence of recommendations and with the tacit consent of the Ministry of Agriculture and the agricultural organs in the various areas, the republic's kolkhozes and sovkhoses have been following a program aimed at increasing the sowing norms for grain crop seed.

The recommendations for agricultural management in the Kirghiz SSR, published in 1968, contain the following statement: "In order to obtain high grain yields, importance is attached to determining the seed sowing norm in the correct manner. This requires that consideration be given to the conditions for plant growth and development. On highly fertile and fertilized soils, the sowing norm must be somewhat lower (but by how much) than on non-fertilized tracts and impoverished soils." In addition: "The best sowing norms for grain crops, for the optimum sowing periods on irrigated and non-irrigated lands (here all factors are considered), with the land having ample precipitation will be for winter wheat -- 5-6 million, for spring wheat -- 4-4.5 million and for spring barley -- 3.5-4.0 million germinative grains per hectare and in the Tyan'-Shan' region, where the culture of farming is still not very high, the sowing norm for barley should be 4.5-5.0 million grains per hectare (legal orientation towards a low culture of farming)."

As you can see, the sowing norms are recommended with no consideration being given to the predecessor crop arrangements: following fallow or a bed of perennial grasses, following corn, sugar beets or a grain predecessor crop. And also regardless of where the fields are located -- at Issyk-Kul', in Oshskaya Oblast or in the Talas or Chu river valleys.

Here is roughly how the peasants reasoned earlier: the richer the earth, the less sowing and the poorer the earth, the greater the sowing density. Still another opinion was held regarding this matter; it was held by the remaining peasants: the richer the earth, the more dense the sowing.

Strange as it may seem, such reasoning by peasants has in recent years been raised to the level of "advanced experience." Today, 300-350 kilograms of winter wheat are being sown per hectare and even more in individual instances. This is 180-200 kilograms more than the prescribed amount. And this is on areas numbering not just hundreds but rather thousands of hectares.

Does this not constitute a waste of valuable first class grain, the cultivation of which requires a great amount of effort and resources?

At the present time, excessive increases in the sowing norms have become a tradition. And thus any attempts to change the established system invariably encounter a sharp rebuff on the part of the agronomists and officials in the various areas. Moreover, the agronomists have forgotten the principal rule governing the cultivation of grain crops: a crowded sowing leads to lodging, a reduced amount of grain, a large quantity of straw and a sharp drop in yield.

In particular, excessive oversowings of grain crops are being tolerated at kolkhozes and sovkhoses in Issyk-Kul'skaya Oblast and in Moskovskiy, Sokulukskiy, Naukatskiy and Dzhangli-Dzhol'skiy Rayons. Thus, in Ak-Suyskiy Rayon, an average of 302 kilograms of winter wheat seed and 290 kilograms of spring barley seed were sown throughout the rayon in behalf of the 1980 harvest and at the 1 May Kolkhoz -- 300 and 341 kilograms respectively. According to existing recommendations, for a sowing coefficient of 5.0 and 4.0, 250 kilograms of winter wheat and 188 kilograms of spring barley should have been sown on the average throughout the rayon on each hectare. The oversowing per hectare amounted to 52 kilograms of winter wheat seed and 102 kilograms of spring wheat seed.

In Tyupskiy Rayon, where the principal grain crop areas are located on non-irrigated lands, 340 kilograms of winter wheat seed and 280 kilograms of spring barley seed per hectare were sown on the average throughout the rayon. The oversowing per hectare, compared to the recommended sowing norm, amounted to 90 kilograms of wheat seed and 116 kilograms of barley seed.

Considerable overexpenditures of seed are taking place in other rayons throughout the republic. And this is occurring year after year.

Could it be that the raised norms serve to raise the cropping power or lower the degree of weediness? Neither the one nor the other. Quite the opposite picture is observed. Compared to 1975 when the cropping power of winter wheat in Issyk-Kul'skaya Oblast was 38.4 quintals per hectare, in 1979 -- 35.1 quintals per hectare and in 1980 -- 30.8 quintals per hectare. The fields in Ak-Suyskiy and Dzhetty-Oguzskiy Rayons are so overgrown with weeds that on some of them there are as much as 180 or more wild oats plants per square meter and this tends to reduce the yield by one half.

The kolkhoz imeni VLKSM in Tyupskiy Rayon, where 470 kilograms of winter wheat seed were sown on a seed tract, provides a fine example of the ruinous effect of raised sowing norms. In the spring, after the plants had entered the stem extension stage, there were 1,459 of them per square meter. At harvest time there were 817 stalks, with 642 of the plants having perished as a result of excessive crowding. The ears on the remaining stalks were so small that the average weight of an ear was only 350 milliliters. This field produced 28.6 quintals of grain per hectare that was completely unsuitable for sowing purposes.

The question arises as to what prompts the kolkhoz specialists into sowing a double norm of seed on non-irrigated land or on a seed-breeding plot. There is a simple explanation: how is it possible to lower the sowing norm if the field was plowed late or if it is covered with clods of earth? The sowing machines, upon passing over it, fail to plant one half of the seed in the soil. Certainly, grain is required and the sowing work cannot be called off. Thus, only one solution remains: plant more seed in order to obtain a harvest.

Is it possible then to reduce the sowing norm on well prepared and level fields? Nothing of the sort. Even on well prepared fields, during both dry and damp autumn periods and following fallow, a bed of perennial grasses and corn, the same 3 and even 4 quintals of seed are being sown. Why?

Finally, it must be understood that on excessively crowded sowings even clean grain involuntarily assumes the functions of weeds: the plants crowd out one another, the stalks on crowded sowings are thin and have elongated internodes and finally everything becomes infected by powdery mildew and blight.

In recent years, the problem of sowing norms has been studied extensively by many researchers both in the USSR and abroad. Based upon experimental data developed at VASKhNIL /All-Union Academy of Agricultural Science imeni V.I. Lenin/, it has been established that the optimum sowing norm for winter wheat seed, under irrigation conditions and depending upon the type of soil, the predecessor arrangement and the moisture conditions for varieties of the intensive type, fluctuates from 3 to 3.5 million germinative seed per hectare, which in a weight expression (depending upon the mass of 1,000 grains) and for a majority of the natural-climatic zones, amounts to 108-182 kilograms per hectare. According to foreign data (U.S.A.), winter wheat yields obtained from sowing norms which ranged from 58 to 136 kilograms per hectare differed very little from one another.

In order to determine the optimum sowing norm, experiments were carried out over the past 3 years at strain testing stations in the Kirghiz SSR, the purpose of which was to study the sowing norms for regionalized, highly intensive and potentially highly productive varieties of winter wheat. The experiments were carried out at five strain testing stations in the principal grain growing zones: at the Przheval'sk, Issyk-Kul', Kalinin, Sokulukskiy and Leninpol' strain testing stations. The experiments were carried out using two regionalized varieties -- Bezostaya 1 and Przheval'skaya -- with a sowing coefficient of 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, 5.5 and 6.0 million grains per hectare.

The optimum sowing norm at the Przheval'sk Strain Testing Station was 4.0 million grains, at the Issyk-Kul' and Sokulukskiy stations -- 3.5 million and at the Kalinin and Leninpol' stations -- 3.0 million germinative grains per hectare. In a weight expression, these figures correspond to 220 kilograms, 192.5 kilograms, 164.5 kilograms, 147.0 kilograms and 159.0 kilograms.

Similar results were obtained from experiments carried out on productive sowings at the Novyy Put' Kolkhoz in Issyk-Kul'skiy Rayon. The Przheval'skaya variety of winter wheat produced the following results: from 3.0 million grains, 32.0 quintals per hectare were obtained, from 4.0 million -- 30.6 quintals per hectare and from 5.0 million -- 28.4 quintals per hectare.

The experiments carried out at the strain testing stations and at the kolkhoz clearly revealed that the plants on more sparse sowings developed better and furnish more productive stalks, more plump ears and a greater quantity of grain. In addition, the grain is larger, more glassy and contains a greater quantity of protein. With an increase in productive tillering, achieved as a result of enlarged feeding areas, the proportion of straw in the harvest is decreasing, the plants are becoming lower in size and they are more resistant to diseases and lodging.

Raised sowing norms are especially harmful on seed-breeding plots. As a rule, such sowings furnish small yields (up to 60 percent) of seed grain and, conversely, the seed obtained from low sowing norms subsequently produce higher yields of grain. Hence it follows that the most productive seed is that obtained from comparatively low sowing norms. Plantings based upon a reduced sowing norm ensure a high coefficient of seed reproduction, a factor which is of great importance for seed production. The size of the seed increases with low sowing norms.

In the case of grain, a direct relationship exists between the feeding area of the plants and the coefficient of tillering. As the feeding area of the plants is enlarged, the coefficient of tillering increases and, as a result, an increase takes place in the proportion of seed which forms on stalks of the second order and on the second growth.

The data obtained at the strain testing stations reveals that in rich soil, on well fertilized lands and following the best predecessor crops, winter wheat furnishes an optimum number of productive stalks and comparatively high yields when small and even at times low sowing norms are employed.

An experiment was carried out over a period of 3 years at the Issyk-Kul' Strain Testing Station in connection with studying the breeding qualities of the seed and their influence on winter wheat grain yields. The highest yield -- 81.9 quintals per hectare -- was obtained from seed which was sown on a seed-breeding plot with a sowing norm of 3.5 million germinative grains per hectare. The yield obtained from a seed-breeding plot where the sowing norm was 5.0 million grains per hectare was 74.5 quintals per hectare, or 7.4 quintals less per hectare. Thus, it is apparent from the data cited that the use of low sowing norms on rich soil serves to raise the cropping power and pedigree qualities of the seed considerably.

At the present time, an unjustified expenditure of seed grain is taking place at kolkhozes and sovkhoses throughout the republic during the sowing of grain crops owing to an increase in the sowing norms. Moreover, this increase in the sowing norms is not supported either by science or leading practice.

In order to lower the unproductive overexpenditures of seed, the republic's scientific-research institutes must in the near future provide clear recommendations for all of the republic's grain growing zones, recommendations which take into account the natural climatic conditions, the predecessor crop arrangements and the availability of moisture. A clear differentiation must be set forth in the recommendations regarding the sowing norms for irrigated and non-irrigated lands. Moreover, the sowing norms for non-irrigated lands must be developed for weak, medium and strongly non-irrigated land.

This problem must be presented to the agricultural specialists in the following manner: orientation towards raising the sowing norms is equivalent to orientation towards mismanagement and a low culture of farming.

In describing the existing situation with regard to the sowing norms, by no means do I advocate an immediate lowering of them in all areas with no analysis being carried out. Nothing worthwhile would ensue from such action. However, a review of the norms and consistent reductions in them should be started immediately in a planned, well thought out and organized manner.

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Follow-Up Commentary

Frunze SEL'SKOYE KHOZYAYSTVO KIRGIZII in Russian No 12, Dec 81 p 41

[Follow-up commentary by T. Dzhamalidinov, Deputy Minister of Agriculture for the Kirghiz SSR]

[Text] An article by the chief of the Inspection of the State Committee for the Strain Testing of Agricultural Crops for the Kirghiz SSR, I. Yastrebov, was published in Issue No 8 of this journal for 1981 under the title "Optimum Seed Sowing Norms for Grain Crops." The Editorial Board has received a reply from the Ministry of Agriculture for the Kirghiz SSR in which it is reported that "in connection with this problem, a specific instruction has been given to the Kirghiz Scientific-Production Association for Farming for the purpose of conducting a final study of the low sowing norms, with recommendations to be made subsequently for agricultural production throughout the republic.

Herewith the text of this instruction:

For the general director of the Kirghiz Scientific Production Association for Farming, K.Sh. Shayykov:

The Ministry of Agriculture for the Kirghiz SSR wishes to inform you that an article by the chief of the Inspection of the State Committee for the Strain Testing of Agricultural Crops and honored agronomist of the Kirghiz SSR I.I. Yastrebov, entitled "Optimum Seed Sowing Norms for Grain Crops," has been published in Issue No 8 for 1981 of the journal SEL'SKOYE KHOZYAYSTVO KIRGIZII. In this article, the author discusses the problem of carrying out planned, efficient and well thought out work in connection with reviewing the sowing norms for grain crop seed and subsequently achieving reductions in these norms.

In this regard, I request that you examine and study the proposals by I.I. Yastrebov and, based upon scientific works available within your association, present the ministry, for final examination and approval, with draft recommendations for the republic's kolkhozes and sovkhoses on scientifically sound sowing norms for grain crop seed, based upon zonal considerations.

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TILLING AND CROPPING TECHNOLOGY

TILLAGE MEASURES FOR SPRING GRAIN CROP IN KAZAKHSTAN

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 7 May 81 pp 2-3

/Article by V. Druzhinets, director of the Stantsionnyy Sovkhoz in Komsomol'skiy Rayon, Kustanayskaya Oblast: "High Agricultural Practices for the Spring Sowing," and commentary by Ministry of Agriculture for the Kazakh SSR/

/Text/ The republic's agricultural workers are responding to the decisions handed down during the 26th CPSU Congress by intensifying their campaign aimed at providing the homeland with a large quantity of Kazakhstan grain this year and increasing the production and procurements of all farming products. Towards this end, as pointed out during the April Plenum of the Central Committee of the Communist Party of Kazakhstan, an entire complex of spring field work must be carried out in a timely manner and on a high agrotechnical level and a firm foundation established for obtaining a high yield.

Valuable experience is contained in the following article by the director of the Stantsionnyy Sovkhoz in Kustanayskaya Oblast V. Druzhinets and in the recommendations by the Ministry of Agriculture for the Kazakh SSR. Moreover, they raise vital questions which must be addressed by the farm leaders and specialists when determining the tactics to be employed for carrying out pre-sowing and sowing operations, taking into account the prevailing spring conditions, and also when improving the organization of such operations and raising their quality.

The Stantsionnyy Sovkhoz is a typical virgin land farm in the zone of the northern oblasts of Kazakhstan, characterized by medium shallow and low humus chernozem soils. The weather conditions do not indulge the farmers. On the average, the total amount of annual precipitation is 280-300 millimeters. Frequent dry winds during the spring and summer period promote the development of wind erosion and create a great moisture deficit. It is by no means an easy task to obtain a high yield under such conditions; knowledge of all of the intricacies of grain growing operations is required.

During the years of the Tenth Five-Year Plan, our farm obtained 17.4 quintals of grain per hectare from our entire grain area, or 4.2 quintals more than the level for the Ninth Five-Year Plan. The tasks for selling all types of farming and animal husbandry products to the state were fulfilled.

These successes were achieved based upon the extensive use of leading agrotechnical methods and scientific achievements and upon the implementation of an entire complex of measures associated with the system of farming. We do not have oversimplifications in our technology or primary or secondary agricultural methods. Each is carried out strictly during the best period and in a high quality manner. This is not the first spring that the machine operators have moved their equipment out onto the fields and yet each time during this very important period they mentally recall all of the previous spring periods. They remember the caprices of weather imposed upon them, they analyze the situation and they do everything possible to ensure their readiness for any and all surprises thrust upon them by nature. Yes, no one spring is like any other. However, the implementation of a complex of organizational and agrotechnical measures developed by science and confirmed by practice serves to guarantee that high and stable yields will be obtained each year.

The productive use of equipment and complexes in behalf of high quality field work is ensured only if the equipment and complexes are prepared in a timely manner. This is why the agronomic and engineering services of the sovkhoz, during the remaining days, are engaged in work concerned with proper completion of the machines, correcting all technical shortcomings observed and inspecting once again the sowing units of sowing machines, plowshares, cultivator sweeps and markers, that is everything upon which the quality of the entire technological process is primarily dependent. Taking into account the ripening of the soil and the peculiarities of each field, we carry out a complex of early spring operations, using mainly BIG-3 harrows, which ensure the breaking up, smoothing out and packing of the soil, the burying of weed seed and protection of the fields against the effects of wind erosion. When required, we carry out additional soil packing. A BIG-3 harrow can be employed against any background and thus we use these units mainly in two shifts.

All field work will be carried out using seven sowing complexes and this will raise labor productivity considerably, reduce the labor resources and, most important, it will ensure continuity for the entire technological process. Teams for providing technical and cultural domestic services are included in each complex.

We are devoting special attention to the quality of the field work. Indeed even the best variety, sown using first class seed, will not produce an increase in yield if the weeds were not destroyed prior to sowing or if the seed was planted at a shallow depth. All of this can be ensured through organizational measures. The conditions were developed for issuing moral and material incentives. Control posts and route plans for the priority sowing of fields were approved. During the period between covering over the moisture and sowing, we strive to prepare the fields for work, collect the straw residue, narrow the inter-field roads and divide the fields into plots. Low productivity perennial grasses, both on arable land and on lands which have undergone radical improvement, must be plowed up. In view of the present moisture supplies on these lands, it should be possible to obtain fine forage crop yields this year.

In carrying out the decisions handed down during the 26th CPSU Congress, the 15th congress and the 2d Plenum of the Central Committee of the Communist Party of Kazakhstan, the sovkhoz's collective is calling for a considerable increase in grain production and for the cropping power to be raised to 20 quintals per hectare during the Eleventh Five-Year Plan.

Towards this end, work is being carried out at the farm aimed at improving the structure of the area under crops. First of all, we will enlarge the forage and pulse crop fields. We are attaching great importance to the proper use of mineral and organic fertilizers. This is the true path to be followed for raising soil fertility and cropping power. Even given our dry conditions, this will furnish a considerable increase in cropping power for all agricultural crops. Our best results are being produced by an application to the drill rows of 15-20 kilograms of phosphorus per hectare, simultaneously with the sowing of the seed. A chemical treatment point has been organized at the sovkhos for this purpose; here there are also warehouses and domestic facilities. The collective at the chemical treatment point prepares the mineral fertilizers, transports them and loads up the sowing units. The refilling of the units is carried out using re-equipped combines that have been written off. Each combine serves 3-4 sowing units. This year we plan to sow the grain fields with mineral fertilizer being applied to the drill rows at the same time.

We consider the following to represent an important reserve for raising cropping power: sowing 1st class seed of the sowing standard, introducing new and more productive varieties into production operations in a timely manner and observing the optimum periods and sowing norms.

This year we converted over completely to the sowing of first class seed and new varieties have been introduced -- Donetsk-8 barley and Sinel'nikovskiy-14 oats.

We are commencing the sowing of wheat using the Bezenchukskaya-98 variety, we will subsequently sow Saratovskaya-29 and we will complete this work using the Khar'kovskaya-46 durum variety, which in terms of cropping power is the equal of soft wheats provided the principal agrotechnical requirements are met. We will complete the sowing of spring wheat no later than 25 May and forage crops -- prior to 30 May. We will differentiate the sowing norms depending upon the sowing method and period, the supplies of soil moisture and the predecessor crop. An individual approach will be employed for each field. However, we will not crowd the plantings as a rule; we will employ the optimum norms developed at the Karabulak Experimental Station. We still have not realized the full return from the introduction of the anti-erosion system of farming. And we believe that the chief reason for this lies in the failure to make complete use of it. The crop rotation plans are quite often being disrupted and we still have not achieved the proper yield from our fallow fields.

Our sovkhos has been amply supplied with highly skilled machine operators. Each one of them possesses several allied professions. The competition among the farmers, as always, is headed by the communists. Party and party-komsomol groups and also people's control posts have been created in the sowing complexes. We display special concern for the field workers during the sowing period by creating the required cultural and domestic conditions.

The functions, rights and responsibilities of all of the specialists and leaders of production sectors have been clearly defined at the sovkhos. This has raised considerably the role and responsibilities of the chief specialists. An agronomist is the chief technologist for farming at the farm.

The sovkhos's entire collective is fully resolved to commemorate the first year of the five-year plan with a high yield and to honorably carry out the obligations undertaken and in terms of all indicators.

Comments by the Ministry of Agriculture for the Kazakh SSR

The Ministry of Agriculture for the Kazakh SSR believes that today, just as in past years, the entire complex of agrotechnical measures employed during the spring period must be directed towards solving the chief problem of steppe dry farming -- the accumulation, retention and rational consumption of soil moisture.

During the winter, snow retention work was carried out throughout the republic on an area in excess of 27 million hectares. In addition, spring precipitation supplemented to a considerable degree the moisture supplies in the soil.

This year the annual peculiarities obligate us to intensify the differentiated use of agricultural practices and arrange their use on each field depending upon the moisture content, weediness, mechanical texture of the soil, predecessor crops, crops sown and other factors.

The chief task is that of lowering unproductive moisture losses, which in the principal grain regions, owing to a considerable gap in time between the commencement of field work and sowing, are considerable. This is borne out by the data of scientific institutes, which reveals that during this period it is most important to arrange the work in a manner such that the natural process of evaporation is curtailed to the maximum possible degree.

In this regard, early spring tilling of the fields, or as it is sometimes referred to, moisture retention work, is one of the chief agrotechnical measures in the complex of operations to be carried out. Great importance is attached to ensuring that this work is carried out in a timely and high quality manner.

Regardless of the degree of moisture out on the fields, moisture retention work must necessarily be carried out on a strict basis and with the proper selection being made of the technology and implements to be employed. A needle-shaped harrow is the most effective implement for covering over moisture on a stubble field or autumn plowed land. It retains the stubble on the surface of fields, it breaks up the soil crust very well and it buries in the soil weed seed lying on the surface.

The existing pool of these machines is enabling the sovkhoses and kolkhoses to till more than 10 million hectares this year. Thus, considerable importance is being attached to arranging them in wide-swath assemblies and to organizing the work in two shifts so as to ensure a maximum productivity.

Another implement for retaining moisture on a stubble field -- shallow plows with flat disks, which distinct from spherical ones do not mix up the upper layer of soil but rather shift the plant residue lying on the surface. In addition, they break up the soil crust, level off a field and reduce capillary evaporation.

If a farm lacks the above-mentioned implements, the fields can be tilled early in the spring using shallow plows with spherical disks, installing the latter at the required angle of attack.

Tilling carried out with spiketooth harrows is permissible and furnishes positive results on terrace plowed soil.

A number of farms are failing to attach proper importance to moisture retention work in behalf of perennial grasses and this is a great error. Grasses under cultivation on crop rotation fields as well as on lands that have undergone radical improvement also should be tilled using needle-shaped harrows and on alfalfa fields of two or more years of duration the use of stubble plow disk harrows with a low angle of attack is effective.

In a number of rayons, owing to last year's unfavorable autumn conditions, the loose and lumpy autumn fields were plowed late. On such tracts, soil packing was carried out using ring rollers following soil retention work. This is the best method for leveling off the surface, it creates optimum packing of the surface layer and it ensures favorable conditions for germination of the weed seed.

Success in combating weeds, the operating conditions for the sowing units and the quality of the sowing work proper are all greatly dependent upon pre-sowing tilling of the soil, which is an equally important method in the complex of operations to be carried out during the spring period.

The agronomists in the various areas, taking into account the weediness of the soil, the availability of moisture, mechanical structure of the soil, sowing periods and other conditions, select the pre-sowing tilling methods required for this implement and the appropriate adjustment for them.

One of the chief requirements for this present spring period is the complete inclusion in the work of the entire pool of anti-erosion implements for extensive tilling -- cultivators, sweeps and others. If there is a shortage of such implements, the possibility is not ruled out of employing stubble plow disk harrows for pre-sowing tilling. However, in order to avoid a drying out and pulverization of the soil, a mandatory condition for such use must be that of good moisture in the soil. Stubble plow disk harrows must not be used for tilling fields marked by a deficit of moisture.

The chief task during this current spring period is that of obtaining full-value and healthy seedlings. We must not repeat the mistakes of last year, when on individual farms in Irtyshskiy Rayon, Pavlodarskaya Oblast and Beskaragayskiy Rayon, Semipalatinskaya Oblast, the soil was allowed to dry out, the seed was not planted in a damp layer and the seedlings on many fields appeared only after a summer rainfall.

A minimal gap in time between pre-sowing tilling and the sowing work makes it possible to destroy the weeds more completely and to retain moisture. This requires efficient coordination of the work of the soil cultivation and sowing units. The experience of recent years has shown that the best results are obtained in those areas where the organization of labor has been given much thought and where sowing and soil cultivation complexes have been created.

More than 22 million hectares of fallow and autumn plowed land have been prepared for the republic's spring crop fields, or 5 million more hectares than last year. At the same time, approximately 6 million hectares of unprepared land must be sown. This is more than 20 percent of all of the spring sowing. Large areas of such land are to be found in Kustanayskaya, Pavlodarskaya, Kokchetavskaya, Turgayskaya and Aktyubinskaya Oblasts.

Sowing work carried out on such fields requires the use of a special approach. Mouldboard plowing should not be employed, since quite often it is the chief cause of wind erosion and it lowers sharply the yields obtained. Every attempt must be made to retain a maximum amount of stubble; this is achieved through tilling carried out using sweeps and cultivators. The use of wide-swath units together with powerful tractors ensures a high productivity for these implements and the required quality of work.

On lands that are free of weeds, when sowing grain crops as the second crop following fallow and where the mechanical texture of the soil so permits, the sowing should ideally be carried out using SZS-2.1 sowing machines, with no independent pre-sowing tilling. In this instance, the teeth of the sowing machine ensure destruction of the weeds during just one pass by the unit.

This year the availability of scari-seeder units is making it possible to sow more than 22.3 million hectares throughout the republic. Measures must be undertaken to ensure that all such sowing units are utilized to their maximum capability.

The various zones throughout the republic have optimum sowing periods. In the northern grain zone, the optimum period for spring wheat occurs during the second half of May and for spring barley -- from 25 May to 1 June. This is a general rule. At the same time, the sowing periods are defined more specifically in the various rayons and on the farms, depending upon the prevailing conditions.

The lands which are free of weeds must be sown first of all. On weedy fields, one should wait until the weeds have appeared so that they can be destroyed prior to sowing.

In some rayons in Kokchetavskaya, Turgayskaya and other northern oblasts, owing to neglect in carrying out the agricultural practices, the fields have become badly contaminated by wild oats. The campaign against wild oats requires a great amount of attention. Such fields must necessarily be tilled using needle-shaped harrows. Intermediate tilling for the purpose of achieving intensive germination of wild oats seed prior to sowing must be eliminated and more complete destruction of wild oats must be achieved through pre-sowing tilling.

Special importance is attached to correctly determining the sowing time for fallow fields, which in many instances are also contaminated by wild oats.

The determination of the sowing norm and the depth of seed placement must be decided upon depending upon the seed quality, the variety, the sowing periods and methods and the moisture and nutrient content of the fields.

This year the possibility exists of applying mineral fertilizer to the drill rows, simultaneously with the sowing, on an area of 4.3 million hectares, or almost one fifth of all of the grain fields. This represents an important reserve for raising the cropping power and quality of the grain. Mineral supplements must first of all be applied to fields on which spring wheat and also groat crops are being cultivated.

For carrying out this work, use must be made of the combination seed and fertilizer drills already available on the farms.

Special concern must be displayed for such crops as millet, buckwheat, pulse, potatoes, vegetables, technical crops and rape. Organizational measures must be completed and areas assigned to teams in a manner such that not one hectare of millet, buckwheat or technical crop is left untended. They must be planted following the best predecessor arrangements, rich soil must be created for them and the required amounts of fertilizer applied in their behalf.

In order to increase the production of pulse crops, all of the seed stock must be used for the sowing for grain purposes. We must not repeat the mistake of past years, wherein a number of farms sowed pea seed for forage purposes while at the same time they failed to carry out their planned sowings for grain.

Potatoes should be grown on irrigated lands and if such land is lacking -- on fertilized fallow lands. The planting norms and periods must be observed in a very strict manner.

During the next few days, the sowing of early vegetables must be completed in all areas: carrots, table beets, onions and other green crops. Special attention must be given to raising high quality cabbage and tomato seedlings and in full satisfaction of the requirements. Efficient use must be made of each square meter of protected ground.

The periods are at hand for sowing the principal oil-producing crops -- sunflowers and flax. The teams responsible for growing them must be fully supplied with fertilizers and herbicides.

The cultivation of a valuable forage crop -- rape -- is commencing in a number of rayons. The task has been assigned of rapidly organizing the production of rape seed. The mistake made last year must not be repeated; rape was sown late on a number of farms and thus did not ripen for seed purposes. The sowing of rape for seed purposes, in all areas in the northern rayons of the republic, must be carried out prior to 10 May.

The tending of winter crops must be continued in the republic's southern oblasts. Here the sowing of late crops must be completed in an organized manner -- rice, cotton, corn for grain and soybeans -- and the tending of the plantations must also be organized. Progressive cultivation technologies must play a great role in the carrying out of this work. An industrial technology will be employed this year for the cultivation of 50,000 hectares of cotton and corn for grain, 20,000 -- sugar beets, 10,000 -- sunflowers, 12,500 -- soybeans and 100,000 hectares of corn for silage. These areas must be distinguished by a high level of work organization and by the efficient carrying out of all technological operations.

Simultaneously with the carrying out of spring sowing, attention must also be given to those areas set aside for clean fallow. By no means should their tilling be postponed to a later period. The experience of farms distinguished by a high culture of farming underscores the advisability of carrying out the first tilling of fallow during the spring sowing period. This is made possible by the increasing power-worker ratio of the sovkhozes and kolkhozes.

In order to ensure a high level of agricultural practice, the spring field work must be carried out in a high quality manner. Last year, for example, there were

a number of incidents of incorrect ganging of soil cultivation and sowing machines, poor adjustment of their working organs, incorrect sowing of the edges of fields and other violations that resulted in a crowding or thinning out of plantings, irregular seed placement, increased weediness and caused great harm to the crops and cropping power.

Strict agronomic controls must be established at all of the sovkhoses and kolkhoses. The accepted method for daily acceptance by the agronomists, managers, brigade leaders, detachment chiefs and team leaders of the work carried out by each machine operator during a shift, with an evaluation as to its quality, must be observed. Cultivated or sown fields must be accepted on a daily basis by the agronomists. The movement which has as its motto "A Badge of Quality for Each Field" must be further developed.

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TILLING AND CROPPING TECHNOLOGY

SNOW RETENTION MEASURES IN KAZAKHSTAN DISCUSSED

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 10 Dec 81 p 1

/Editorial: "Winter Agricultural Complex"/

/Text/ During the November (1981) Plenum of the CC CPSU, the food problem was cited as being the central problem of the entire five-year plan. The chief role in solving this problem was assigned to grain production. The task was assigned of increasing the country's average annual yield of grain by almost 35 million tons. Kazakhstan must provide a substantial increase in such production. The republic's grain growers plan to raise the gross yield of grain to 28-29 million tons annually.

The solving of this problem requires further improvements in grain production and in the culture of farming and, on this basis, growth in the productivity of the fields. Here we have in mind, as mentioned during the Plenum of the CC CPSU, the need for weakening the dependence of agriculture upon the weather through the introduction of a scientifically sound system of farming and leading agrotechnical methods.

"We still have not learned how to command the weather" stated L.I. Brezhnev in a speech delivered before the Plenum, "we must adapt our agricultural operations to the climatic adversities in a more skilful manner." Fine and stable yields can be obtained every year. This has been confirmed once again this year by the grain growers in Kokchetavskaya, Severo-Kazakhstanskaya, Kustanayskaya, Turgayskaya, Tselinogradskaya, Aktyubinskaya and other oblasts. It is sufficient to state that 257 sovkhoses and kolkhoses, despite extremely severe weather conditions, supplied the state with more than 1 million poods of grain.

It was not too long ago that it was believed that the soil and climatic conditions of Kazakhstan precluded the possibility of always obtaining guaranteed and stable yields of grain. However, past experience, especially the experience of leading farms in the virgin land tends to refute more and more this long held opinion. The extensive introduction of the soil-protective system of farming and the use of chemical processes in grain production have made it possible to raise noticeably the productivity of the fields. And within the complex of agrotechnical measures aimed at raising the cropping power of fields, snow retention work occupies a special place.

As is known, wheat is the principal food crop. It requires 250 millimeters of productive moisture during its growing season. Under the conditions found in the republic, almost one half of the soil's moisture is created during the autumn and

winter period. Thus exceptional importance is attached to one particular agricultural measure -- that of accumulating winter precipitation out on the fields. In particular, the role played by such a measure increases during years like the present one, when the soil is entering the winter season without sufficient moisture. In order to compensate for such a deficit, as much snow as possible must be accumulated.

Each year the republic's sovkhozes and kolkhozes carry out this agricultural measure on an area in excess of 30 million hectares. Data accumulated over a period of many years reveals that snow retention work makes it possible to realize an increase in yield on the order of 2-4 quintals per hectare, or 18-20 rubles worth of net profit. At an experimental farm of the All-Union Scientific-Research Institute of the Grain Economy, snow retention work made it possible to obtain additional grain yields amounting to 2.5-3 quintals per hectare even during extremely dry years.

There is an old saying: "Snow on the fields means full granaries." In order to create the conditions required for high yields in the future, the farm leaders and specialists must display special concern for carrying out work associated with the accumulation of winter precipitation in a timely and high quality manner. Each sovkhoz and kolkhoz has the potential for organizing snow retention work. The only requirement is that the work must be carried out in a thrifty manner, with the peculiarities of each field being taken into account. This year, as never before, this work requires agronomical knowledge. It must be carried out taking into account the condition of the soil on each tract and the methods employed for autumn cultivation. Stubble has been left on large field areas and this serves to promote good snow retention. On such fields, snow ridges can be formed following the formation of a cover 10-15 centimeters in thickness.

The chief consideration is that all snow retention equipment must be placed in a state of readiness in all areas. Moreover, this equipment must be moved out onto the fields without delay and the operation of the units must be organized in a manner so as to ensure a high productivity for them. At the present time, many sovkhozes and kolkhozes are successfully employing the method of ganging snowplows, as proposed by specialists attached to the Tselinnyy Scientific-Research Institute for the Mechanization and Electrification of Agriculture. This method is rather simple: two powerful K-700 tractors are ganged with a tow consisting of 30 conventional snowplows. Such a wide-swath unit is capable of forming snow ridges on an area of up to 800 hectares daily. Last year, at the Batalinskiy Sovkhoz in Kustanayskaya Oblast, two such units carried out snow retention work on an area of 30,000 hectares in 3 weeks. Earlier, more than 30 caterpillar tractors were employed on the farm for carrying out this work.

Snow retention work is one of the most important agricultural measures carried out during the winter period. It must be conducted under the direct control of specialists. This agricultural measure must produce good results. It has been proven in actual practice that a deficit of soil moisture during dry years can be compensated by a snow cover no less than 50-60 centimeters in thickness. In order to accumulate such a supply of winter precipitation, use must be made of the best methods for forming snow ridges and the frequency of the ridges determined. Experience has shown that the best results are achieved when the ridges are arranged perpendicular to the direction of the wind and with a distance between them of 2-3 meters. Under this year's conditions, the snow retention work should

ideally be carried out in two tracks and where required -- in three. Such is the method employed at many sovkhoses and kolkhozes. However, there are still many farms which are barely able to carry out this work one time. Hence, these farms experience shortfalls in their yields.

The foundation for a future harvest is established during the autumn and winter period. The republic's farms have already accomplished a great deal towards consolidating the success achieved by the farmers during the first year of the five-year plan. But a great amount of work still remains to be carried out in order to achieve high grain yields. At the present time, importance is being attached to carrying out the entire work volume of the winter agricultural complex in a timely and high quality manner. First of all, the snow retention work must be carried out in a high quality manner. At the same time, the movement of organic fertilizer out onto the fields must be organized. The farm leaders and specialists must mobilize the equipment and personnel required for this work and they must create all of the conditions required by them for highly productive work.

The farmers of Kazakhstan achieved fine results during the first year of the Eleventh Five-Year Plan. Their selfless labor is valued highly. But, as stated by Comrade L.I. Brezhnev during the Plenum of the CC CPSU, the work of those engaged in agriculture should not be evaluated based upon the results of just one year. Their labor should be evaluated taking into account the results they achieved during both good and bad weather and also the stable nature of the results of their labor. It is a matter of honor for the workers attached to sovkhoses and kolkhozes in Kazakhstan to obtain high agricultural crop yields every year and to intensify the production of agricultural products.

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TILLING AND CROPPING TECHNOLOGY

HINDERANCES TO SOIL-PROTECTIVE SYSTEM OF FARMING DESCRIBED

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 18 Aug 81 p 2

/Article by B. Kuznetsov, Ural'skaya Oblast: "Without Furrow Slice Inversion"/

/Text/ The sixth brigade of the Pugachevskiy Sovkhoz is well known in Burlinskiy Rayon. It is headed by the distinguished field crop grower and laureate of the State Prize of the Kazakh SSR, Ivan Tikhonovich Karpunin. The collective's leader has played a leading role in terms of cropping power. Yet last year the productivity of the grain field turned out to be lower than that for the remaining five sovkhoz brigades. What was the problem?

"Up until recently, the sixth brigade was the only one which continued to operate in accordance with the old technology and without use of the complex of soil-protective implements" explained the farm's chief agronomist, A.P. Zhuravlev, "the high cropping power was achieved as a result of more fertile land. But in 1980 it amounted to only 8 quintals, compared to an average of 10 for the sovkhoz."

The Pugachevskiy Sovkhoz began converting over to non-mouldboard plowing in 1972. Initially it was introduced in the second brigade. Special crop rotation plans involving a brief rotation were developed, the brigade was supplied with a complex of anti-erosion machines and training was provided for the machine operators and field crop growers. The experiment was a success. The following year, more than two additional quintals of grain were harvested from each hectare. Thereafter, the innovation was introduced in the fourth brigade. The remaining brigades, with the exception of the sixth, began employing this system during the Tenth Five-Year Plan. As a result, with the same areas in use, the average annual procurements of grain at the sovkhoz during the tenth five-year period increased by almost 6,000 tons compared to the previous five-year period. The cropping power was raised by 3.5 quintals. The agronomists calculated as follows: if the branch employed the new technology throughout all the years of the Tenth Five-Year Plan, the sovkhoz on the whole would obtain no less than 26,000 additional tons of grain. This would almost equal the annual sale of grain to the state. But the transitional period was dragged out. This occurred owing to a shortage of equipment.

"We employed sweeps on vast areas during the Ninth Five-Year Plan" stated A.P. Zhuravlev, "yet for the complete mastering of the new system, we lacked a complex of implements, particularly SZS-2.1 stubble field sowing machines, KPSH-9 cultivators and BIG-3 harrows."

We are still experiencing a shortage of machines today. Indeed, all of the brigades without exception must now employ the new system. Moreover, the time is at hand for a number of subunits to renew their equipment inventory. Thus, no less than 30 SZS-2.1 sowing machines are required.

The example of the Pugachevskiy Sovkhoz sheds light on other factors as well. During the past five-year plan, the soil-protective system of farming was introduced extensively on a majority of the farms in Burlinskiy Rayon -- the principal grain area in the steppe Priural'ye region. And in all areas it revealed its unquestionable advantages. Owing to the use of this system, a considerable increase was realized in the yield per hectare at the Ural Kolkhoz. The average annual sale of grain to the state, for example, increased by 67 percent, the production cost for a quintal of grain fell noticeably and labor expenditures for the production of a quintal of grain decreased by a factor of 1.5.

At the Kolkhoz imeni Tel'man, the increase amounted to 3.2 quintals per hectare. Here, up to 70 percent of the autumn plowed land was cultivated using sweeps. Extensive use is made of stubble field sowing machines and "BIG" harrows for carrying out the sowing work.

The Akbulakskiy, Aksu and Mirgorodskiy sovkhozes and other farms are mastering the soil-protective system of farming in a complete and efficient manner. It is being employed on 70 percent of the arable land at the Pobeda Kolkhoz. Here the cropping power of the grain crops has been raised by 2.5-3 quintals. During the past five-year plan, despite three unfavorable years, the farm's grain growers obtained 16,000 additional tons of grain. For the rayon as a whole, the average annual procurements of grain exceeded the same indicator for the ninth five-year period by 39,803 tons. The cropping power of the grain crops was raised by almost 2 quintals.

"The progress achieved" stated the chief of the raysel'khozupravleniye /rayon agricultural administration/ V.A. Volkov, "we attribute to many factors. But based upon experience, we are aware that the chief one among them is the mass conversion over to the soil-protective system of farming. It has been completely introduced into operation in 50 of 68 tractor-field crop brigades. Thus, not all work has been carried out as yet. This work will be continued throughout the Eleventh Five-Year Plan. For it to be successful, we must expand the pool of anti-erosion machines.

During the discussion, the secretary of the rayon party committee, N.A. Donets, confirmed the situation: today the rayon's farms lack KPG-250 and KPG-2-150 sweeps and they are also experiencing a need for SZS-2.1 stubble field sowing machines and KPSH-9 cultivators. It was for this reason that the Kolkhoz imeni Tel'man and some other farms had to resort to conventional disking, instead of spring cultivation, and they thus lowered the effectiveness of the soil cultivation work.

The new machines offer many advantages and the farmers have sized them up properly. Actually, the stubble field sowing machine carries out four operations simultaneously -- soil cultivation, application of fertilizer, sowing of seed and packing of the furrows.

This is all quite true: the sowing machine is strong and reliable and can serve for many years. But it does have vulnerable areas. In particular, the sowing

unit cannot endure a load. The reels rub easily through the housing and the unit breaks down. At first, Kazakhsel'mash produced it by means of poured castings; now however it is being stamped. The difference became immediately apparent.

The farm is presently receiving sowing machines with markers on the chassis (earlier they were installed on SP-16 couplings). What will this lead to? By virtue of its weight, the marker tends to press down one side of the unit, thus precluding the possibility of achieving uniform seed placement. Economists at the Ural Kolkhoz estimated as follows: for a cropping power of 15 quintals, the shortfall in grain will amount to approximately 500 kilograms per hectare. When one considers that the stubble field sowing machines are used here for sowing more than 11,000 hectares, it is easy to determine the overall losses -- no less than 550 tons. And this is only for one farm.

The SZS-2.1 unit has other design imperfections, all of which should be corrected immediately. The working organ of the unit does not follow the contours of the soil. Moreover, the open furrow of a previous cultivation is not sown and on hillocks the seed is planted at a depth which precludes the possibility of it ever breaking through to the light. As a result, unhealthy seedlings are obtained and the plants ripen at different periods. Hence new losses are created.

In addition, the sowing machines do not meet the agrotechnical requirements for plant distribution throughout the feeding area -- the distance between the drill rows is excessive. The automatic units of the sowing machines require design modifications. When the sowing machine is fully loaded and adjusted, the seed is released in a normal manner. If the seed containers are empty -- the weight of the sowing machine decreases. At the same time, the quality of the seed placement work decreases.

The machine builders must employ a more creative approach in producing the BIG-3 harrows. The design in use today has a number of drawbacks. Depending upon the moisture content and the weediness of the soil, the units must be shifted from one regime to another. These are laborious operations that consume a great amount of time. The sweeps also have some shortcomings. On alkaline and heavy clay-loam soils, the frameworks, supports and pads do not stand up. Breakdowns of the units result in idle time and losses of valuable time, which in turn results in crop losses.

Under the new working conditions, a shortfall in grain is quite often the fault of those farms which blatantly violate the crop rotation plans. Thus the introduction of a sweep system of soil cultivation calls for the conversion over to crop rotation plans having brief rotations. This leads to an increase in the area of clean fallow. In the zone of the steppe Priural'ye region, such fallow must constitute 16-17 percent of the fallow land. Unfortunately, in recent years this indicator has not risen higher than 11 percent and in 1978 it was only 6.3 percent. Any plowed sector of land not occupied by a crop (turned over long fallow land, radically improved land, long-standing beds of grass and so forth) is considered to be a fallow field. The fallow land percentage is formally raised in this manner and the semblance of well-being in farming is created for a particular farm. In a number of rayons, the fallow land areas have been reduced to zero. What is the result: a noticeable increase in the contamination of fields by wild oats. Such

a process is taking place in Priural'nyy Rayon, where the fallow land area during some years has been reduced to 2.3 percent.

There is every reason for stating that the trend towards an unjustified reduction in the volume of fallow land will either become more intense during the next few years or at least remain at its present level. This is borne out by the fact that the sovkhozes and kolkhozes are following an unwritten rule: expanding the sowings of grain crops mainly at the expense of fallow. And this points towards one development: the foundation for the progressive system of farming, for which the farms themselves have been striving, is being undermined and the output from the grain fields is declining.

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CSO: 1824/138

WATER RESOURCES

PAYMENTS FOR WATER BY INDUSTRIAL ENTERPRISES DISCUSSED

Moscow FINANSY SSSR in Russian No 11, Nov 81 pp 63-66

/Article by M.V. Shpil'ko, department head in Administration of State Income of USSR Ministry of Finances: "Payments for Water Taken By Industrial Enterprises From Water Systems"/

/Text/ For the purpose of raising the interest of production associations (enterprises) in the rational utilization of water, a payment is being introduced for water obtained by industrial enterprises from water systems, in the form of a production cost. Decree No 292 of the CC CPSU and the Presidium of the USSR Supreme Soviet, dated 19 March 1981, concerning "Improvements in the Role Played By Soviets of Workers' Deputies in Economic Construction" established the fact that 50 percent of the payments made for water is added to the local budgets. The councils of ministers of autonomous republics and the executive committees of kray and oblast soviets of peoples' deputies identify the local budgets into which these payments are made.

The USSR Goskomtsen /State Price Committee/, USSR Minfin /Ministry of Finance/, USSR Gosplan and USSR Minvudkhov /Ministry of Land Reclamation and Water Resources/, in letter No 10-17/466 dated 2 February 1981, concerning "The System and Schedules for the Introduction of Payments for Water Obtained By Industrial Enterprises From Water Systems," set forth the principal conditions for introducing the mentioned payments. On 5 March 1981, USSR Minvudkhov, by agreement with USSR Gosplan, approved the list of water systems for which water payments are to be made. This list included the country's principal rivers and canals. Moreover, the term "river" is understood to include a river's entire basin, including all reservoirs, lakes and other surface water areas located therein. Moreover, the term water system is understood to mean a complex of mutually related water areas and hydraulic engineering installations, the purpose of which is to ensure the correct utilization and protection of the water.

The USSR Goskomtsen, in Decree No 377 dated 14 April 1981, approved the rates which were developed based upon the national economic expenditures for providing consumers with water in the required volume. They are differentiated according to the water systems. USSR Minfin, by agreement with USSR Minvudkhov, issued Instruction No 124 dated 15 June 1981, concerning "The System for Computing and the Schedules for Making Payments Into the Budget for Water Obtained by Industrial Enterprises From Water Systems." This payment will become effective on 1 January 1982.

Such water must be paid for by state industrial enterprises (associations), including enterprises of heat and power engineering; industrial enterprises of public, cooperative (excluding kolkhozes) and interfarm organizations, which operate on the basis of economic accountability and which have an independent balance and a bank account.

Production associations, for which sub-accounts (sub-special loan accounts) are opened at institutes of the bank at the locations of their production units, for maintaining accounts with the suppliers and purchasers for commodity-material values and for services rendered, make water payments from the mentioned sub-accounts at the locations of the production units. If an industrial enterprise is not a legal entity and does not have an independent balance and belongs to an association or organization which does not relate to industry but rather to other branches of the national economy (agriculture, construction, trade and so forth), then it will not make a payment into the budget for water.

A payment for water is made into the budget either directly by industrial enterprises (associations) or through enterprises of the municipal economy, depending upon the nature of the water supply. Thus, industrial enterprises (associations) which themselves withdraw water from water systems make direct water payments into the budget. Enterprises (associations) which withdraw water from water systems through the water supply lines of enterprises of the municipal economy (regardless of their departmental subordination), presently pay for their services based upon the water issued. Commencing 1 January 1982, these payments for services will include a payment for water, which subsequently the enterprises of the municipal economy must add to the budget revenue. Just as in the past, the payments for services based upon the issuing of water will remain at the disposal of the enterprises of the municipal economy.

One circumstance must be borne in mind: individual industrial enterprises (associations), upon withdrawing water from water systems, consume a portion of it in satisfaction of their own requirements and transfer another portion to other industrial enterprises. In this instance, the industrial enterprises (associations) which withdrew water must make a payment into the budget for the entire volume of water, both for that expended for internal needs and also for that transferred over to other industrial enterprises. Computations are carried out between these enterprises, similar to the system established for municipal economy enterprises which supply water to industrial enterprises.

A payment for water withdrawn from water systems is not collected from enterprises and organizations of the housing and municipal economy or domestic services (regardless of their departmental subordination). For example, the Ministry of Domestic Services for the union republic has under its subordination an industrial enterprise for the production of equipment for consumer services enterprises, which is a consumer of water obtained from a water system. This enterprise, which is an economic accountability facility having an independent balance and a bank account, will be released from having to make a payment into the budget. Permit me to cite still another example. A plant has its own dining hall and shower-baths. It will make a payment for all water withdrawn, including that used for the dining hall and shower-baths.

It should be borne in mind that in the case of water systems for which water payments were established earlier, the system for collecting the payments and the

rates are being retained. For example, commencing 1 January 1982 a water payment will not be made into the budget by those industrial enterprises which obtain water from the Irtysh-Karaganda Canal, since they pay for it in accordance with the rate established in 1976. The rates were established for 1 cubic meter of water withdrawn. The payment is quintupled in the case of above-normative (above-limit) withdrawals of water.

The rates established for those heat and power engineering enterprises which use water for cooling units are lower than those established for other industrial enterprises. For water consumption within the normative limits, the payment is carried out at a reduced rate -- 30 percent of the rate established for the particular water system and in the case of above-normative (above-limit) water consumption, the payment is made at the principal rate. When computing the reduced rate, rounding off is carried out to 0.01 kopecks, with a fractional portion less than 0.005 kopecks being thrown out and a portion equal to 0.005 kopecks or more -- increased to 0.01 kopecks. It should be borne in mind that heat and power engineering enterprises, for water used for purposes other than for heating units (for water level maintenance in boiler units, heating networks and so forth), make a payment in accordance with the principal rate for normative (limit) water consumption and a quintupled amount for above-normative (above-limit) withdrawal of water.

A payment for water withdrawn within the limits of the normative (limit) is taken into account in the planned production cost and for an above-normative (above-limit) withdrawal it is reflected as unproductive expenditures, which are not considered to be a planned element of the production cost.

Enterprises having to make a payment, regardless of their subordination and in conformity with Section 13 "Payment for water withdrawn by industrial enterprises from water systems," make a water payment as follows in accordance with the income classification of union and republic budgets and also in accordance with the income classification for the budgets of autonomous republics and local budgets: 50 percent of the computed total into the municipal or rayon budget at the location involved or by decision of the council of ministers of an ASSR or the executive committee of the kray or oblast soviet of people's deputies, into the republic (ASSR), kray or oblast budget; the remaining 50 percent -- into the union budget. In the instructions for making water payments, the sums which must be paid into the union and local budgets are singled out.

The payment must be made no later than the 20th of the month under consideration. At this same time, the enterprises having to make payments present the financial organ and the organ responsible for exercising control over the use and conservation of water with monthly reports, in the established format, on the payments for water.

The total amount of payment for normative and above-normative withdrawal is determined based upon the volume of water withdrawn during the past month and the established rate. In the process, the established normative (limit) for water consumption for a given enterprise is taken into account. Allow me to cite an example (see Table).

In conformity with the Temporary Instruction for the Maintenance of Initial Accounting on Water Consumption and Water Withdrawal, approved by USSR Minvodkhoz

Water System	Established Norm (limit) for Water Withdrawn, cubic meters	Actual Water Withdrawn, cubic meters	Rate for 1 Cubic Meter of Water Taken Within Norm Limits, kopecks	Total Payment for Actual Water Taken, Within Norm Limits, rubles-kopecs	Amount of Water Taken Over and Above Norm (group 3 - group 2), cubic meters	Rate for 1 cubic meter of water withdrawn over and above norm (in fivefold amount of group 4), kopecks	Total Payment for Above-Normative Withdrawal (group 6 X group 7), rubles	Total Payment for All water Withdrawn (group 5 plus group 8), rubles
1	2	3	4	5	6	7	8	9

During January

Ural River	100,000	110,000	1.18	1180-00	10,000	5.90	590	1,770
Ural River	100,000	90,000	1.18	1062-00	-	-	-	1,062

on 6 July 1975, the amount of water withdrawn by enterprise-water users is determined on the basis of data recorded in the initial accounting log for water usage.

The list of enterprises, organizations and institutes, whose use of water is subject to state accounting, is determined by the basin (territorial) administrations and inspections for controlling and conserving in the use of water or other local organs of the USSR Minvodkhoz system, by agreement with the local organs of Goskomgidromet /State Committee for Hydrometeorology and Environmental Control/ (surface waters) and USSR Mingeo /Ministry of Geology/ (underground waters).

A consolidated plan for water management is composed for each enterprise, organization or institute. This plan points out and provides numbers for the water withdrawal and discharge areas and also the points for its transfer to other consumers. Consumption is measured at each water intake, at discharge points for waste water, within circulating water supply systems, where repeated use is made of waste water and at those points where water is transferred over to other organizations.

The results of such measurements are recorded in special journals. The overall data is entered in a summary journal. The pages of the journal must be numbered and corded in the established manner. The journals are filled out directly during the measurement process. The introduction of amendments or corrections is categorically forbidden. Completed journals are stored for 5 years in the archives of the enterprise, organization or institute.

On the first of each month, the user-enterprise takes the readings from the water measurement instruments and, based upon the data in the initial accounting journal, determines the volume of the water withdrawn. An exception can be made in the case of enterprises which lack the required equipment. Here the withdrawal of water can be determined temporarily based upon a computation of the operating time of the technological equipment, the volume of products produced, the water consumption norm, the characteristics of the operating pumps, the

total amount of electric power consumed and other indirect methods. In the process, appropriate instrument calibration work must be carried out.

In the case of municipal economy enterprises which withdraw water from water systems and supply it to industrial enterprises, they must also make water payments into the budget no later than the 20th of the month, including for above-normative (above-limit) volumes during the month that has elapsed, the month in which accounts were maintained between them and the water-user enterprises. In such instances, the municipal economy enterprise is responsible for presenting the municipal financial departments and the organs for regulating the use and conservation of water with monthly reports on water payments.

For the correct computation and timely making of payments into the budget, the municipal economy enterprises must take stock of the sums obtained from the industrial enterprises.

An example. On 15 August, a confectionery factory paid 6,500 rubles to a municipal economy enterprise, of which amount 5,500 rubles represented a payment for the issuing of water remaining at the disposal of the municipal economy enterprise and 1,000 rubles -- a payment for water, intended for adding to the budget. The payment was made for the volume of water withdrawn from 5 July to 7 August. In this instance, the municipal economy enterprise makes the payment into the budget not later than 20 September and includes it in the report for the month of August.

It should be borne in mind that the normatives (limits) for the withdrawal of water are established and formulated in conformity with the instruction on the system for coordinating and issuing licenses for special water usage, No 6/3-02 approved on 5 June 1978 by USSR Minvodkhoz in agreement with USSR Gosstroy.

Licenses for special water usage are issued:

- a) by USSR Minvodkhoz, if the special water usage is carried out at water installations, the controlled use of which falls within the competence of the USSR;
- b) by the ministries of land reclamation and water resources and other union-republic organs of land reclamation and water resources of union republics and their organs in various areas, when implementing special water usage at water objects, the controlled use of which does not fall within the competence of the USSR, provided the water objects concerned are used as sources for centralized water supply, fall in the category of navigable or timber rafting waterways or are used for obtaining underground water, involving a forced reduction of the water level or the discharge of waste water into surface and underground water objects;
- c) in the remaining instances, the issuing of licenses for special water usage is carried out by the councils of ministries of autonomous republics and the executive committees of local soviets of people's deputies (and in union republics established by law -- by the councils of ministers of the union republics).

Licenses for withdrawing water from water supply lines or for discharging waste water into sewerage lines are issued by the corresponding owners of the water supply line-sewerage systems, in conformity with the conditions established in the licenses obtained by them for special water usage.

In conformity with Article 16 of the Principles of Water Legislation for the USSR and Union Republics, water objects are made available for indefinite or temporary usage. Indefinite (permanent) licenses for special water usage are established with no period of time being established. Temporary licenses are issued for a period of up to 3 years (for short-term use) and for 3 to 25 years (for long-term use). When necessary, the periods may be extended for a period of time not to exceed the respective periods for short-term and long-term use. The issuing of the licenses is carried out by the organs responsible for controlling the use and conservation of water and also by the executive committees of local soviets of people's deputies, in the established manner.

The principal conditions for water usage are pointed out in a license: the maximum amounts of consumed and discharged water and changes thereto throughout the year, the methods for computing these amounts, the composition and permissible concentrations of harmful substances in discharged water (established taking into account the Rules for Protecting Surface Water From Contamination Caused by Waste Water), the operational regimes of water systems and reservoirs and also other conditions.

In the case of a mixed water supply and sewerage arrangement (withdrawal of water partially from a water object, partially from the water supply line systems of another enterprise or city; the discharge of waste water partially into a water object or partially into the sewerage network of another enterprise or city), the indicators for water usage are pointed out separately in the license: for internal water supply and for the use of other water supply line-sewerage systems. In the process, the conditions are pointed out under which a given enterprise (organization) is authorized to use other water supply and sewerage systems.

A license is prepared in three copies and reinforced by the signature of the responsible individual and a seal. One copy is issued to the water user and the other two, with all pertinent materials, are retained by the organ responsible for controlling the use and conservation of water of the union republic and by the territorial (basin) administration (inspection) responsible for controlling the use and conservation of water. If the license was issued by the USSR Minvodkhoz, then it should have been prepared in four copies.

When modernizing enterprises, installations and objects, and also in other instances associated with the need for changing the conditions for special water usage (an increase in water consumption or in the discharge of waste water, or an improvement in the quality of the latter), the water user must, either on his own initiative or in response to a requirement by the appropriate organs for controlling the use and conservation of water, obtain a new license in keeping with the established procedures. In the absence of licenses for special water usage, the norms (limits) are established in the manner defined by USSR Minvodkhoz.

One question arises quite frequently. An industrial enterprise withdraws water from its own artesian well. Is it required to make a payment into the budget for water obtained from this well? No, it is not required, since such wells are not included among those water systems for which a water payment must be made.

The local limits for water withdrawal are computed by the water user-enterprises themselves, within the annual limit established by the organs for controlling the

use and conservation of water, taking into account the planning materials. The leaders and chief bookkeepers of enterprises are responsible for the correctness of these computations, for ensuring that water payments are made into the budget in a timely manner and for the timely presentation of water payment reports to the financial organs and the organs responsible for controlling the use and conservation of water. Those enterprises which have not presented the financial organs, prior to the established period, with a monthly report on the total amount of water payments due for the preceeding month, will in the future, prior to presenting the report, pay 110 percent of the total amount computed for the preceeding month. Once the enterprise-payer has presented the appropriate report, a recomputation is carried out with him.

The system for verifying water payment reports differs from checks carried out on other payments made into the budget. A preliminary check on these reports is carried out by state income economists (inspectors) and a documentary check, in accordance with the data contained in primary documents (license for special water usage, initial accounting journal for the use of water and so forth) -- by the organs for controlling the use and conservation of water.

Such a division of labor in carrying out checks on the reports derives from the fact that the financial organs, owing to the absence of water measurement equipment at a number of enterprises and also in connection with the specific nature of water usage initial accounting, are incapable of determining the volumes of water withdrawn or the payments for it, and consequently, of carrying out a documentary check. Such a check carried out on water user-enterprises of organs responsible for controlling the use and conservation of water is carried out by these organs no less than once each year and for the remaining payers -- once every 2 years. If a documentary check reveals that violations occurred in the computation of water payments, then a statement is prepared to this effect by the checker and a copy sent to the financial organ.

A preliminary check (without leaving the enterprise) must be carried out by the state income economist (inspector) no later than 1 day following the day on which the report was received from the payer. In the process, checks are carried out upon the following factors: was use made of the established form for a water payment report, were the rates employed correctly within the limits established for normative (limit) withdrawal of water and for above-normative (above-limit) water consumption, were the arithmetical computations of the payment amounts correct, were the payment totals distributed among the union and appropriate local budgets and were the amounts indicated in the report transferred over to the budget?

If it is established by the financial organ or the organ responsible for controlling the use and conservation of water that the water payment was incorrectly computed, the payment will be recomputed: the difference will either be applied to the appropriate budget or it will be returned (included in the next payment) to the payer.

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WATER RESOURCES

OFFICIAL NOTICE OF REQUIRED PAYMENTS FOR USE OF WATER

Moscow EKONOMICHESKAYA GAZETA in Russian No 7, Feb 81 p 9

/Article: "Concerning Payments for Water"/

/Text/ In carrying out the 12 July 1979 Decree of the CC CPSU and the USSR Council of Ministers entitled "On Improvements in Planning and Intensifying the Effect of the Economic Mechanism With Regard To Raising Production Efficiency and the Quality of Work," USSR Goskomtsen /State Committee on Prices/, USSR Gosplan, USSR Minfin /Ministry of Finance/ and the USSR Minvudkhov /Ministry of Land Reclamation and Water Resources/, in Letter No 10-17/466 dated 2 February 1981, adopted the resolution:

1. Commencing 1 January 1982, to introduce a payment for water withdrawn by industrial enterprises from water systems.
2. To establish raised payments for above-normative (above-limit) withdrawals of water by industrial enterprises from water systems.
3. The expenditures by industrial enterprises for water withdrawal payments, within the limits established by the organs responsible for controlling the use and conservation of water, are applied to production costs.

Expenditures for above-normative (above-limit) water withdrawals are applied to the actual production costs and taken into account as non-productive expenses.

4. Two types of rates are established for the withdrawal of water by enterprises of heat and power engineering and by other branches of industry which employ water for the cooling of units:

... a favorable rate of payment is introduced for water consumption within the limits of normative (limit) water withdrawal;

... a raised rate is introduced for above-normative (above-limit) water consumption.

5. The payments by industrial enterprises for water withdrawn from water systems are added to the state budgetary revenue.

The industrial enterprises are responsible for the correctness and timeliness of the budgetary computations involving payments for water.

The organs responsible for controlling the use and conservation of water exercise control over the correct determination, by the enterprises involved, of the volumes of water withdrawn and the payments required for the water.

The financial organs exercise control, in the manner prescribed, over the timely fulfillment by the industrial enterprises of their obligations with respect to making water payments into the budget.

In conformity with this letter, USSR Minvudkhoz must:

... by agreement with USSR Gosplan, establish a list of water systems for which a water payment is required;

... by agreement with USSR Goskomtsen, USSR Gosplan and USSR Minfin, approve methodological instructions for computing the rates for water withdrawn from water systems by industrial enterprises;

... present for approval a draft plan for water rates, for water withdrawn from water systems by industrial enterprises.

USSR Gosplan and USSR Minfin, in the plans for economic and social development and in the state budget, will take into account the corrections associated with the introduction of payments for water withdrawn from water systems by industrial enterprises.

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Feb 11, 1982